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ADVERTISING THE TRADE AS A WHOLE.

EVERY legitimate business needs advertising as a constructive aid to its growth and development, for advertising has often been referred to as the "life of sales."

That there is considerable truth in this axiom was clearly indicated when the master plumbers of Indianapolis participated in the Second Annual Disease Prevention Day Parade, held in that city on Friday, October 1st.

Believing firmly in the creative value of advertising, the master plumbers of the Hoosier capital were represented by three large and elaborate floats upon which were exhibited modern disease-preventing appliances for the home. Placards setting forth the objects of the plumbing profession in constructing sanitary plumbing and drainage systems were placed in ample number upon the floats, while thousands of circulars urging disease prevention through sanitary plumbing were distributed to the large crowds along the line of the parade.

Among the interesting floats was one containing an old outhouse with a well close at hand. Placards announced that there were prevalent a number of diseases in the outlying sections of the city as a result of conditions such as this.

The participation of the master plumbers as a body in the parade was the very best form of general publicity for the trade. They came forth as a public-spirited organization, interested in one of the problems of the community, disease prevention. By their floats, placards and circulars, they offered a practical remedy in the hygienic value of sanitary plumbing systems.

Co-operative advertising is perhaps the most fitting term which can be applied to the action of the master plumbers in providing the floats for the parade. Here was a commendable form of team work and co-operation. It was broad and creative publicity for the business as a whole, and it was the kind of advertising which was educational in its direct appeal to the public.

Leading exponents of modern advertising have pointed out the importance of driving home effective arguments in advertising. The argument presented by the Indianapolis Master Plumbers in the introduction of the sanitary floats, was a direct and convincing one. The local men of the trade worked in harmony with each other to promote public interest in the health-protecting power of modern plumbing.

Through the medium of this broader kind of advertising, this general appeal, the trade will find a strong weapon for destroying those traditional misgivings which connect the plumber with extortion and petty selfishness in his work as a craftsman.

The individual master plumber who advertises in the daily newspaper is exercising prudence as a business man, but still greater prudence is shown where a group or body of master plumbers, acting as a unit, advertise the merits of good plumbing, either in a public parade or a newspaper.

Advertising has today become a mighty and constructive power in all business enterprise. Its influence as a public educator, and as a sales-promoting agency reaches all points of the compass, and wherever men live, think and progress. Advertising pays. The day of the skeptic has passed, and this is the age of advertising.

It is gratifying to note that the plumbing and heating fraternity is rapidly joining the vanguard of progressive business men who realize from long experience, that modern advertising is a creative fact and result-producing in its effects.

Refrigerator Wastes and Connections

Refrigerator Wastes and How They Are to Be Connected in Various Cities in This Country

By JOSEPH GRAHAM

THE manner of connecting the wastes from refrigerators, ice boxes or other receptacles in which provisions are stored is a matter of the greatest importance.

This is evident from the fact that if the food becomes contaminated because of insanitary connections, it is a menace to the health of the occupants of the building.

The refrigerator waste pipe should be disconnected

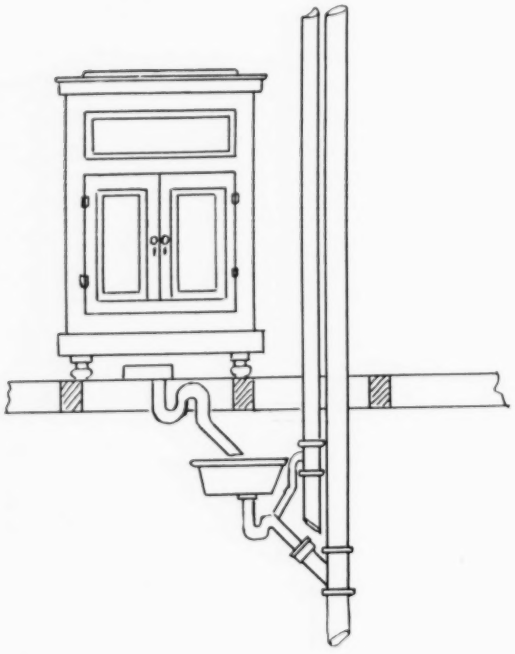


Fig. 1.

from the refrigerator by at least 4 inches, and should be so arranged as to be properly flushed. It should be as short as possible.

In residences it is only necessary to extend the safe waste, when it is employed, from the refrigerator to the sink or other receptacle provided to receive the drip, a light swing check valve being provided at its termination. This valve is employed in order that the air from the cellar will not enter the rooms by means of the waste pipe.

Fig. 1 shows the method of connecting a refrigerator waste. It will be noticed that the waste pipe is trapped. This trap on the refrigerator waste is not absolutely essential in cases of this sort.

It is the general custom to install refrigerator waste pipes in the best type of apartment houses, to take care of the drip from the refrigerators on the different floors.

In Fig. 2 is shown the usual method of installing refrigerator waste pipes in this class of buildings. As seen, the main stack is disconnected from the plumbing system, discharging into a water supplied, trapped and vented sink.

The sink should be located in a public place in the cellar or basement, and from 3½ feet to 4 feet above the floor.

At Akron, O., the wastes may discharge into an open portable pan or lead safe, an open fixture, floor drain, yard or area drain.

At Glens Falls, N. Y., refrigerator wastes are allowed to drip into an open metal catch basin with trapped waste leading to a covered outside dug well, if not connected with a sink.

At Rochester, N. Y., it is permitted to discharge refrigerator waste pipes into an open fixture; on the ground outside of the building and within plain sight, into an antisiphon trap provided with a funnel shaped receiver having

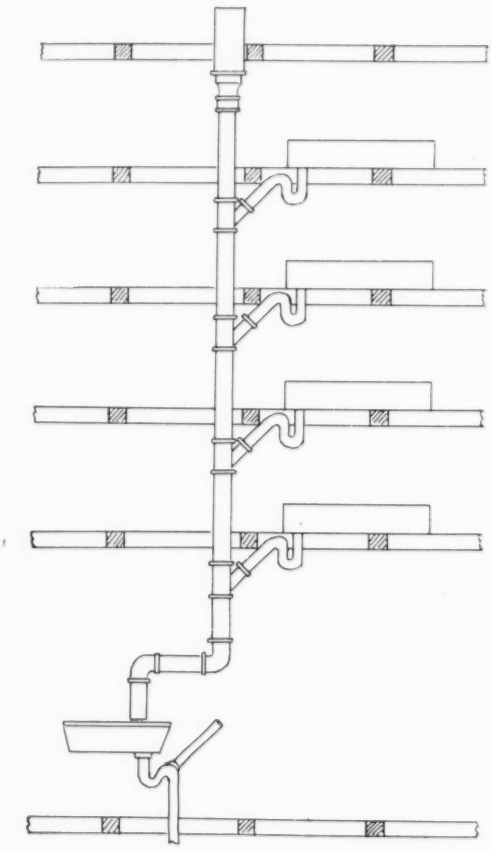


Fig. 2.

a brass screw plug or a gate valve, so that the opening to the trap may be closed when the waste is not in use (this connection is shown in Fig. 3); or into a common trap not less than 3 inches in diameter provided with a funnel-shaped receiver, where such a trap has either a constant intake of water or receives the water from a roof.

This latter case is shown in Fig. 4.

At Trenton, N. J., refrigerator wastes may discharge into an open portable pan or lead safe; an open fixture, floor drain, yard or area drain; or into traps as described above for Rochester, N. Y.

In some codes, the refrigerator waste pipe may discharge outside in sight, when it is found impracticable to run to an open fixture. While in other codes this is prohibited.

The main stack is extended through the roof as a vent, and should not open within 6 feet of an open soil or waste pipe.

It is the general custom to separately trap each refrigerator safe before connecting with the main refrigerator waste stack.

New York City and Bayonne, N. J., make an exception to this rule, in that the safe waste pipe from a refrigerator need only be trapped at the bottom of the line.

A good trap to use in such an installation is a ¼ "S" plain siphon trap. In some instances, a 1½ inch lead "S" trap, a 4 inch round trap, or an anti-siphon trap is employed.

It is unnecessary to back-vent these traps, since from the conditions of their use they are practically non-siphonable.

A view of a refrigerator safe is shown in Fig. 5.

A pan, which should have a depth of about 1½ inches, is built of beveled supporting strips, which are fastened to the floor.

The pan is made water tight, being lined with sheet lead or copper.

As seen, the pan has a countersunk outlet. In order to protect the opening in the pan, a removable strainer is employed which is fastened by a cross bar.

The pipe used for refrigerator wastes should be galvanized wrought iron. Lead may be employed for short branches.

Brookline, Mass., allows the use of extra heavy cast iron for refrigerator wastes, with lead branches.

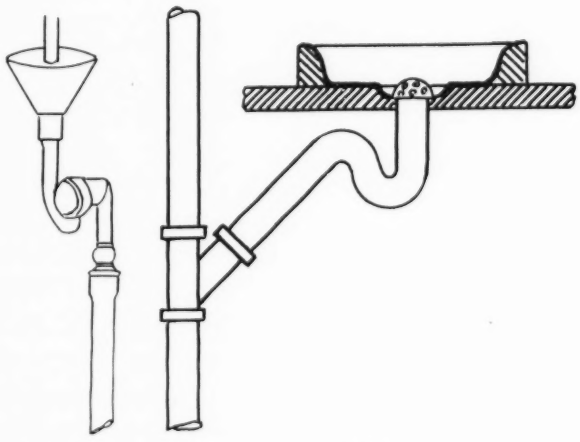


Fig. 3.

Fig. 5.

Trenton, N. J., also allows the use of cast iron pipe, with short branches of lead.

Recessed drainage fittings, galvanized inside and out, should be employed.

The branches on vertical lines are made with "Y" or "TY" fittings, and should be carried up to the safe with as much pitch as possible.

All off-sets and changes in direction should have clean-outs so placed as to control all the piping.

The size of the main refrigerator waste pipe should not be less than 1¼ inches in diameter, while 1½ inches is generally large enough. Pipe branches of 1 inch in diameter should be used.

These sizes, however, have not been generally adopted.

Chicago, Birmingham, Ala., and Houston, Tex., have the following requirement:

The size of waste pipes for refrigerators for two floors or less, 1½ inches; and 2 inches for three floors and over and under five floors, and 2½ inches for five floors and over. Each refrigerator or ice box shall be provided with a suitable trap with an accessible trap screw or clean-out. Such trap shall be placed in the 1½-inch waste pipe and shall be near the refrigerator or ice box.

Washington, D. C., and Buffalo, N. Y., require refrig-

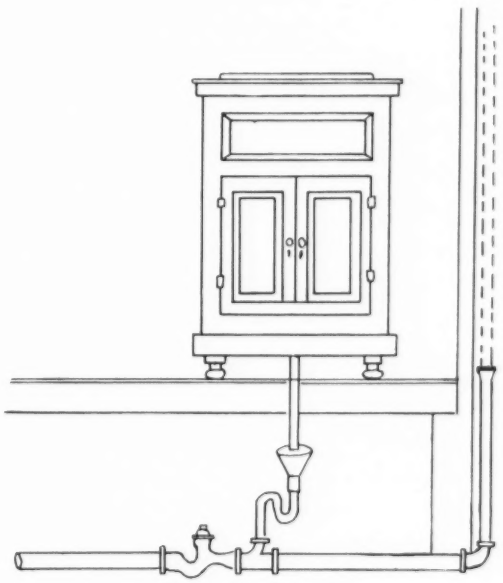


Fig. 4.

erator wastes for two stories to be 1½ inches, and for more than two stories, 2 inches.

Detroit, Mich., has a requirement that where two or more refrigerators are connected into one line of pipe, the size of the waste pipe is to be 2 inches.

The size of refrigerator waste lines at Trenton, N. J., is 2 inches diameter, with 1½ inch branches.

Canton, O., requires waste pipes to be not less than 1½ inches for one opening and for from two to six openings, 2 inches.

Akron, O., and Bayonne, N. J., specify refrigerator wastes to be not less than 1¼ inches, with branches of the same diameter.

Mt. Vernon, N. Y., requires waste lines to be not less than 1 inch in diameter, with branches of the same size.

Jersey City, N. J., requires 1¼ inch refrigerator waste, with 1 inch branches.

Brookline, Mass., requires refrigerator waste lines connecting with two or more stories to be 2 inches in diameter, with 1½ inch branches.

Lowell, Mass., specifies 1½ inch diameter for waste lines connecting with two or more stories.

Davenport, Iowa, requires that waste pipe shall be of the following kinds and dimensions: cast iron, galvanized iron or lead pipe; cast iron pipe not smaller than 2 inches, but 1¼-inch galvanized iron or lead pipe can be used.

An Experiment in Ventilating a Schoolroom

By the CHICAGO COMMISSION OF VENTILATION

ONE of the first experiments determined upon by the Chicago Commission of Ventilation pertained to the ventilation of a schoolroom. For a long time many of the teachers of the public schools of Chicago complained of the ventilation within their rooms. Therefore, with the hearty approval and co-operation of the Board of Education, the experimental work was undertaken in the autumn of 1910. The attitude of the Board of Education has always been to improve the present system of mechanical ventilation within our public schools, if possible. All expenses in connection with the experiments in schoolroom ventilation are gladly borne by the Board of Education.

The public school buildings of Chicago are equipped with the plenum system, operating at a pressure of approximately one-half ounce.

Place and Time of Experiment.

The Chicago Normal College, Sixty-eighth Street and Stewart Avenue, Chicago, was decided on as the building in which to make the experiment.

The experimental work has continued from the autumn of 1910.

Quantity and Distribution of Air.

The first tests made were somewhat in the nature of checking up the work of the builders. A rule of the Board of Education requires the delivering of a minimum of 1,800 cubic feet of air per pupil per hour. Anemometer readings made in several of the rooms of the Normal College showed that this amount was being delivered. There remained, however, a closely related question, namely, whether or not each pupil is supplied with his share.

Studies were made for air currents in two classrooms and one laboratory room.

Devices Used.

The tests for air currents were made by the use of toy balloons which were inflated with hydrogen gas and counterpoised in the rooms by means of improvised weights. In addition to the toy balloons, small turbine wheels were used. These were made from aluminum, cork, and steel needles, and were especially constructed for these tests. The blades of the turbines were made from aluminum and set into hubs of cork. Across one end of a cork hub and parallel with the plane of the blades was fastened a strip of aluminum containing a slight indentation in which the pivot of the device turned. The fine point of a steel needle served as a pivot, and when ready for use the turbine revolved in a horizontal plane. These turbines are very sensitive to vertical currents of air—in fact, they respond to convection currents from the heat of one's hand. The counterpoised balloons were useful in tracing all air currents, irrespective of their direction, whereas the turbine wheels could be used only in testing for vertical currents.

Tests for Air Currents.

One of the classrooms tested is 25 by 25 feet and has an east exposure. The other walls of the room have no immediate contact with the outdoors. The inlet and outlet ducts in this room are installed in the north wall, and the air enters the room with a velocity of about 650 feet per minute. When balloons were pushed into the entering currents, they were hurried across the room near the ceiling to the south wall. From the ceiling at the south wall, the balloons usually took one of two general courses, depending largely upon outdoor weather conditions. If the outdoor temperature was low and the wind was blowing directly against the windows, then the balloons moved over to the outside wall, down the wall or windows, and over to the outlet duct. If the outside temperature was moderate, then instead of the balloons crossing over to the outside wall they were likely to poise in the southeast corner of the room, or possibly move vertically down along the wall opposite the inlet duct to within a foot or two of the floor, and then over to the outlet duct. It was very noticeable that air currents established themselves in aisles and other open spaces along the floor. During the winter season the turbine wheels, when placed on the window ledges, revolved almost all the time. Their direction of rotation indicated the downward movement of a sheet of cold air; moreover, this sheet of cold air was very perceptible to any one seated near the outside wall or windows.

The other classroom is 26 by 45 feet; is a northwest corner room. It has about twice as much exposure on the north as on the west side. As already stated, there are two inlets and two outlets in this room, and they are located in the long inside wall. The velocity of the incoming current of air was practically the same as in the smaller room. Anemometer readings showed an adequate supply of air for good ventilation. Balloons placed in the incoming current were hurried across the room to the opposite wall, the outside wall with the north exposure. After reaching the outside wall, they almost always went vertically downward to within a foot or two of the floor, then they moved over to the outlets near the floor and almost directly under the inlets. The hot incoming air driven against the cold outside north wall and windows reduced the influence of wall and window chill. But in cold weather, especially with a north or northwest wind, a downward moving sheet of cold air was very noticeable. The small turbine wheels revolved constantly in cold weather when placed upon the window lodges or near the exposed walls. In the central part of the room, that is, between the two sets of inlet and outlet ducts, the balloons did not show perceptible air currents. Furthermore, there seemed to be eddies in close proximity to the currents at either end of the room.

The laboratory room in which the tests for air currents was made is 26 by 45 feet, and is a northeast corner room. It has about twice as much exposure on the north as on the east side. The room has two inlets and two outlets on the long inside wall. The inlet duct at the west end of the room is so close to the west wall and ceiling that when the current of air is delivered against the north or outside wall, it takes a diagonal course downward and inward along the north wall and across the windows. By this action of the air current shown by balloon tests, there is a considerable section of the west end of the room in which no perceptible air currents can be found. At the east end of the room, the air current behaves as might be expected, namely, the incoming air crosses from the south to the north end of the room along the ceiling, strikes the cold outside wall and windows, drops vertically downward, and moves over to the outlet. Turbine wheels placed near the windows or outside wall during cold weather were con-

stantly rotating. The direction of rotation indicated a downward current of air.

From the evidence obtained in the use of the balloons and turbine wheels, it is fair to conclude that air within the schoolrooms tested did not act as anticipated in the plenum system. Moreover, the action of the balloons and turbine wheels under varying weather conditions, especially as regards direction and velocity of winds, warrants the conclusion that in the type of construction with which we were concerned, air distribution is seriously interfered with by conditions for which the plenum system, as generally installed, is not responsible.

The Experimental Room.

The first constructive effort in the ventilation of a schoolroom in which the plenum system had been installed was made in one of the regular schoolrooms of the Chicago Normal College. The schoolroom was fitted up as an experimental room. One of the factors considered in the selection of the experimental room was that of subjecting it to our northwest winter winds.

The experimental room is 24 by 32 feet, on the base-

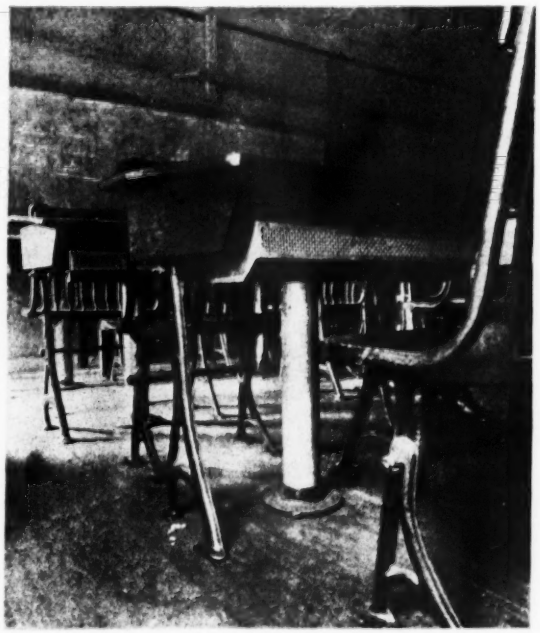


Fig. 1.

ment floor, and has a west exposure. The room originally had a thirteen-foot ceiling. In the original installation for ventilation, air entered the room near the ceiling at the center of the east wall. The main air-current was across the room from the east wall to the west (outside) wall, then down the cold outside wall, and back to the outlet duct near the floor in the east wall. The changes made in the room were as follows: First, the outlet duct, near the floor, was closed; then an air-tight false floor was built about eighteen inches above the regular floor of the room, and a false ceiling was hung about eight inches below the room ceiling; then an air shaft was constructed to connect the inlet duct of the original installation with the air reservoir between the floors. (See Fig. 1.)

Outlet duct was tapped near the ceiling connecting it with the compartment between the ceiling and the false ceiling. Three-inch circular holes were cut through the false floor, and galvanized iron pipes, fitted into these openings, led under each desk to within an inch of the desk bottom. Openings also were made through the false ceiling so that air delivered into the room might move on through it. It will be noted that these changes turned the operation of the plenum system upside down. Instead of the air entering at the ceiling and leaving near the floor line, this new scheme delivered the air below the floor, and outgoing currents left the room at the ceiling. As already intimated, the idea in this scheme was to furnish a positive distribution of air to all the pupils within a room, and also to take advantage of the heat liberated by them in the production of upward moving currents. The new installation was tested in two ways: (1) Simple tests were made with anemometers placed at the edges of the desks. Every test showed an up current. (2) A more striking test than the one with the anemometer, and one as fully convincing, or even more so, was a chemical test made with ammonia and an indicator known as phenolphthalein. This chemical test was made as follows: Linen strings were stretched over the rows of desks at the height of the breathing zone for children seated at the desks. Upon these strings, at intervals of ten or twelve inches, were hung pieces of unsized paper made wet with an alcoholic solution of plenolphthalein. When the room was thus dotted over with these wet papers, it looked much like a laundry drying room flecked with white. Before the wet papers had time to dry, a handkerchief, made thoroughly wet with concentrated ammonia water, was hung in the air duct leading from the plenum chamber, or distributing room, to the experimental room. Within two minutes after hanging the handkerchief in the duct, every paper on the linen threads in the experimental room became red in color. When ammonia is added to a colorless solution of phenolphthalein, the solution becomes red; therefore, the change in the color of the papers was conclusive evidence that ammonia from the handkerchief had been distributed to every piece of paper wet with the alcoholic solution. The test was repeated at another time with the same result. Still another test was made which contained an added feature. In addition to the papers suspended in the breathing zone over the desks and seats, others were hung on strings stretched parallel with those over the row of desks about seven feet from the floor, but directly over the aisles. In this test all the lower papers reddened in approximately the same time as before, and the upper ones reddened soon thereafter. These tests are conclusive evidence that the air in the experimental room is delivered to each desk, and that the movement of the air in the room is upward, and quite uniformly so. Moreover, anemometer tests made at the outlets of the galvanized iron tubes before the desks were placed, showed that each tube delivers approximately the same volume of air in unit time.

The Experimental Room Becomes a High School Room.

As soon as the before-mentioned changes in the experimental room had been made and tested, the room became a regular high school room, in use throughout the day. It is customary for classes to change rooms for different recitations, and, therefore, the experimental room was occupied by different classes each hour. This arrangement added somewhat to the difficulty of our experiments.

A Requirement for Ventilation.

However satisfactory the quantity of air furnished for the ventilation of a room, and however satisfactory may be the means employed for properly distributing it, both of which in the long run are very important, nevertheless

the human body makes an immediate demand which may overshadow either or both. *Immediate physical comfort is the standard of the human body,* whatever the consequences, as exemplified either in the drowsy stupor that descends on one immersed in a hot, stifling atmosphere on a cold wintry night, or in the quiet repose that comes from a balmy summer breeze outdoors. Good ventilation shall produce immediate comfort.

One of the most prominent as well as immediate factors in the production of comfort, is temperature, and therefore a study was made to determine the best temperature for a schoolroom. The comfort of the human body is largely influenced by the temperature of the surrounding air, and also, and at the same time, by the rate at which perspiration may evaporate into the air from the body. Relative humidity influences the rate at which such evaporation occurs, but it is only in recent years that much consideration has been given to atmospheric humidity in relation to temperature and comfort.

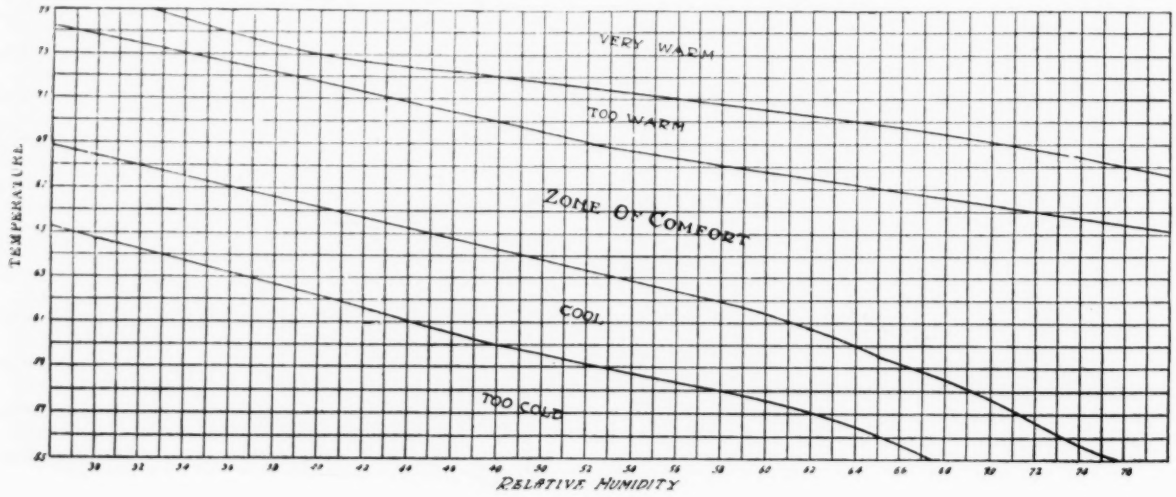


Fig. 2.

Temperature and Humidity in Relation to Comfort.

It has become traditional in this country that the best temperature to maintain in a room is 68 to 70 degrees. There are, however, some who urge that these temperatures are too high, and they cite the English practice of 59 to 62 degrees as evidence of their claim. The difficulty with both these positions is that in deciding on the best temperature, proper consideration is not given to relative humidity. Any adult knows that sultry days are much less comfortable than days of even higher temperature when the atmosphere is comparatively dry. This well-known fact of outdoor experience must be taken into account, especially since it is now recognized that in cold weather we need to humidify air indoors. On this point of humidity, it may be said that the human organism seems to be adapted to a large range of relative humidity, but it is not accustomed to abrupt changes such as one might experience on a cold day in passing from the outdoors into a heated room. In a word, it seems important from the standpoint of health and comfort to maintain a fair degree of correspondence between the relative humidity of outdoors and indoors.

Any system of ventilation, to be practicable, must produce a feeling of comfort, and therefore both the temperature and the relative humidity of the air are important in ventilation. Temperature and relative humidity jointly help determine comfort.

It has generally been considered that a temperature of from 68 to 70 degrees with a relative humidity of 70 per cent, is a most desirable condition to obtain (the 70 per cent relative humidity also is largely traditional). In our tests it was assumed that the best temperature may or may not be 68 to 70 degrees; and also the most satisfactory relative humidity may or may not be 70 per cent.

The experimental room was equipped with an automatic temperature control, and also an automatic humidity control. Moreover, the temperature in the different parts of the room was determined by means of a sling psychrometer. For the most part, the tests on relative humidity and temperature in relation to comfort, were made by a member of the Commission and a graduate student from the University of Chicago. Frequently individual high school pupils in the room were asked whether or not they felt comfortable, and in each case the pupil answering did not know that any other pupil had been asked. The teachers in charge of the room also were asked for opinions. All these opinions, together with our own, served as a basis for record.

Comfort Zone.

Before working very long, it became evident that there was a temperature and humidity range within which the occupants of the rooms were comfortable, and this range gave rise to what is called the Comfort Zone. This term, comfort zone, means that there is a maximum temperature with a minimum relative humidity, and minimum temperature with a corresponding maximum relative humidity between which limits the occupants of a room are comfortable. In other words, there seems to be no best temperature and also no best relative humidity; but the maximum temperature at which one is comfortable will be associated with a minimum relative humidity, and the minimum temperature for comfort will have associated with it a maximum relative humidity. Under the conditions with which we were working, we found that a temperature of 64 to 70 degrees with a corresponding relative humidity of 55 to 30 per cent, seems to be the limits; that is, the comfort zone for us was between 64 degrees and 55 per cent and 70 degrees and 30 per cent. See chart, Fig. 2.

It is worthy of note that with a temperature below 67 or 68, with a proper relative humidity, the pupils were

better able to give attention to their work than if the conditions were otherwise.

Outside Wall and Window Chill.

The problem of how to prevent outside wall and window chill from seriously interfering with ventilation, has never been satisfactorily solved.

With the change in installation in the experimental room, it was necessary to make some provision for preventing a sheet of cold air from falling down the exposed walls and windows. We tried to do this by installing steam pipes along the window casing just in front of the windows. The idea in this installation was to induce convection currents around the windows, and in this way prevent the downward currents of cold air. Tests were made of the scheme in two ways: (1) By the use of the small turbines it was found that down currents of air were established from a few inches to a foot or more above the horizontal steam pipes. A second method was that of getting temperature readings at different heights from the floor in the aisles between the desks and the outside wall. These temperature readings showed a variation from almost nothing to eight or ten degrees, between the floor and the top of the desks. During the very severe weather of January and February, 1912, it became evident that this installation was only partially satisfactory. When the outside temperature was ten or more degrees below zero, there was a cold current of air that spilled out from the window over the top of the heating pipes above the window sills. This fact led to a proposed installation to overcome the window chill in another way—by means of a sheet of hot air. This new installation will be tried during the coming winter.

Ventilating and Heating Combined.

The plenum system with which we have worked combines the heating and the ventilating of a building. The heating is accomplished by means of hot air which also is used subsequently for ventilation.

Insulated Buildings.

Too much importance cannot be placed on the quality of construction in a building in its relation to the efficiency of the ventilating system. This is particularly true with reference to installation. In the usual type of building construction, it is sometimes necessary, in order to heat the building properly, to introduce more air than is required for ventilation. The other alternative might be to introduce the air at an unduly high temperature, but this procedure is always objectionable because of its effect upon the comfort of the occupants. When separate means of heating the building are provided, as with direct radiation, there is a tendency to operate the plant without ventilation. In general, the lower it is possible to maintain the temperature of the incoming air, without discomfort, the better are the results with reference to ventilation. From the standpoint of economy, it is always desirable to introduce no greater volume of air than is actually required for ventilating purposes.

Our Latest Installation.

Our first attempt at insuring an equitable distribution of air for ventilation purposes within the experimental room led us to a more permanent installation. In the new installation, we have separated the heating of the experimental room from the ventilating, in so far as they seem to impair the efficiency of each other. The scheme in brief consists in bringing the air for ventilating purposes into the room through galvanized iron ducts insulated with asbestos and located under the false floor. This system of ducts terminates in three-inch iron pipes securely fastened to the floor and leading up under the desks. The room is heated by means of hot air driven under the floor. The idea in this scheme is to warm the floor. In order to reduce the effect of window chill, double windows are to be installed, and the heated air from under the floor will be forced upward between the two sets of windows and thus effectually overcome window chill. As in the older installation, the air comes in below the desks and leaves the room through twelve registers in the false ceiling. The air used for ventilating, being introduced through separate insulated ducts, may be at a much lower temperature than that of the air used for heating.

HOT WATER SUPPLY SYSTEM FAILS TO CIRCULATE.

Editor "Domestic Engineering":—I am enclosing sketch of a hot water supply system that will not circulate, and which delivers cold water through the hot water bibbs at lavatory and sink on the first floor. The use of a check valve on the circulation has not seemed to have any beneficial results.

Please inform me how to change these connections so that these difficulties will be removed.

Brooklyn, N. Y. "Hot Water."

Fig. 1 shows the connections of "Hot Water's" job, and we do not wonder that it will not circulate, or that

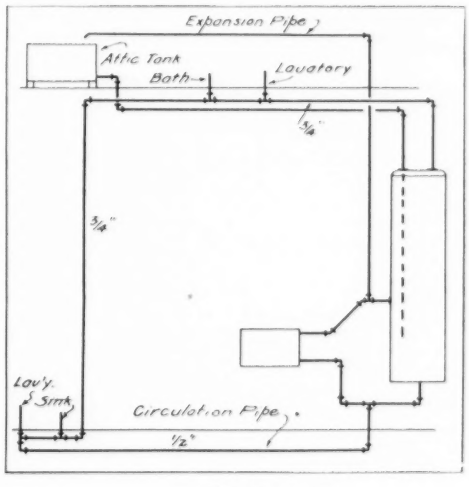


Fig. 1.

cold water is drawn through the two lowest hot water bibbs.

In the first place the head amounts to probably not more than six or seven feet, and under these circumstances it would not be possible to circulate the water back to the boiler from a point below the floor. There would not be sufficient power to raise the return water up to the boiler.

In the second place it is wrong to reduce the size of the circulation pipe to a smaller size than that of the flow pipe.

The expansion pipe is taken from the wrong point,

and does not free the hot water piping of air. This last error is not so vital as it would be, if it were not for the connections to the bathroom fixtures on the second floor, for the air will doubtless vent itself whenever these supplies are turned on.

We think it is impracticable to provide circulation to the two fixtures on the first floor, but believe it can easily be furnished to the second floor fixtures.

In Fig. 2 we show how this can be accomplished. The flow pipe should pitch up from boiler to the end of its

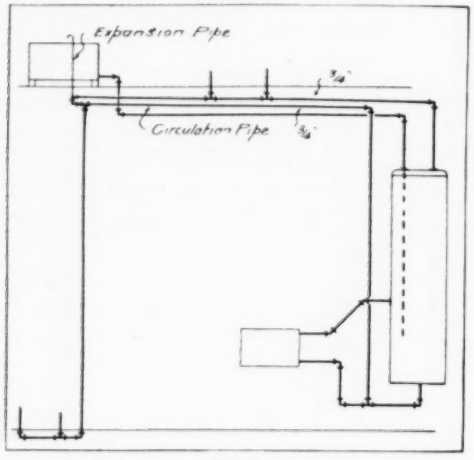


Fig. 2.

run, and from this point an expansion pipe of small size taken up to the attic tank. The circulation pipe should be carried back parallel to the flow pipe, dropping down to the lower pipe of the range connection, and of the same size as the flow. The supply to the first floor fixtures can be taken from the end of the flow pipe, necessitating drawing off only the water standing in the drop line. It is possible that the pipe for these fixtures need not be carried down below the floor.

SEPTIC SEWAGE DISPOSAL BY UNDERGROUND IRRIGATING PIPES.

Editor "Domestic Engineering":—We understand that in many cases the best method to be followed in the use of a septic tank is to use an automatic siphon and discharge into an underground system of irrigating pipes.

Will you kindly give us the chief features of such a disposal system.

Baltimore, Md. A. & B.

The sewer siphon discharges into a main underground distributing pipe, from which lateral distributing branches discharge the sewage over an area proportionate to the amount of sewage to be cared for. This piping may be laid out to conform to the shape of the plot of land that is to be used.

The main is laid with tight joints, and the laterals with open joints. The main should have a very slight pitch, about 6 inches in 100 ft., and the laterals less, about 3 inches in 100 ft. The laterals are generally 2-inch pipe, and of earthenware. The lateral joints should open about ¼ inch, and to protect the pipe against entrance of sand, it is best to cover the open joints with collars made of short pieces of earthen pipe in halves, one on top and the other on the bottom of the joint.

In order that the soil should not be overworked, laterals should be at least 3 or 4 ft. apart. In sandy soil they may be laid closer than in heavy soils. In sandy soil it is estimated that 18 inches of lateral will handle 1 gallon of sewage, but in heavier soils a greater length would be required, up to 4 ft. per gallon.

Eccentric fittings are best for connecting laterals to the main, as such fittings will entirely empty the main, allowing no sewage to remain.

When the soil is not adapted to its work, it will be found beneficial to fill the bottom of trenches in which laterals are laid, with broken stone and gravel.

HOW TO POUR A WET JOINT.

Editor "Domestic Engineering":—Please inform me how to pour a wet joint, that is, a joint where moisture collects, and is liable to make the hot lead fly when the pouring is done.

Peoria, Ill. "Plumber."

As "Plumber" intimates, the presence of moisture when a lead joint is to be poured will cause the metal to "explode" and fly in every direction, causing the workman serious injury. When this condition must be met, the best course to pursue is the following:

Make the joint as near tight as it is possible, with oakum. Then put into the hub a teaspoonful of powdered rosin. Oil may be used if rosin cannot be obtained. This will act to prevent the flying of the hot metal when it strikes the moisture in the hub.

RULES FOR FINDING CONTENTS OF PIPES.

Editor "Domestic Engineering":—Please publish a rule for finding the contents of pipes of any diameter and length. This is a problem that often comes up, and I do not recall ever seeing the matter published.

Louisville, Ky. F. N. K.

The rule for this is exactly the same as that for finding the contents of a cylinder, the length of the pipe being the same as the length of the cylinder.

Rule:—Multiply the area of the inner circle of the pipe, or its bore, by the length, these dimensions being taken in inches. The result will be the contents in cubic inches. To reduce the contents to gallons, divide the contents in cubic inches by 231, the latter being the number of cubic inches in a gallon.

The following table will give the areas of all the sizes that a plumber would generally be called upon to use.

Diameter.	Area.	Diameter.	Area.
½ in.	.1963 sq. in.	3½ in.	9.621 sq. in.
⅝ in.	.304 sq. in.	4 in.	12.566 sq. in.
¾ in.	.4 sq. in.	4½ in.	15.904 sq. in.
1 in.	.7854 sq. in.	5 in.	19.635 sq. in.
1¼ in.	1.228 sq. in.	6 in.	28.274 sq. in.
1½ in.	1.767 sq. in.	7 in.	38.485 sq. in.
2 in.	3.1416 sq. in.	8 in.	50.263 sq. in.
2½ in.	4.909 sq. in.	9 in.	63.266 sq. in.
3 in.	7.069 sq. in.	10 in.	78.54 sq. in.

Such a Long Time Ago.

He had just reached the philosophical stage, when he slipped into a restaurant for a bit to eat. He ordered. Then he sat staring ahead, quietly thoughtful in expression, and waited. Considerable time passed.

At last it came. As the waitress put the order before him, he started from his deep study, as if he had forgotten he had an order coming. Then, looking up at the fair transporter of edibles, he said:

"You don't look a day older!"—Pittsburgh Chronicle-Telegraph.

Planning the Day's Work

By HAROLD WHITEHEAD
President, American School of Business, Inc., Boston

Harold Whitehead.

THE telephone bell rang the third time. Ed Murray, with a gesture of exasperation, went to the phone, picked up the receiver, and yelled, "Hello." An angry feminine voice replied: "Why don't you answer the phone? Is this the Askenville Plumbing Company?" "Yes, ma'am. Who is this talking?" "This is Mrs. Beardsley. You promised to send a man here over a week ago to fix that bath shower I bought from you. Are you or are you not sending one up today?

Ed Murray scratched his head. He had clean forgotten it—and all the men were out.

"I'm sorry, Mrs. Beardsley, but I—that is—we—yes, I've planned to send a man up very first thing in the morning." Then as an inspiration, he added: "I thought you'd sooner have him then than during the day."

"You told me day before yesterday that the man was out on another job and would call at the house on his way back. . . . Don't talk to me!" came a voice like a whip over the phone just as Ed began to speak, "I'm tired of such shillyshallying—I won't have the old thing now at all! You can send your man around for it whenever you like. It will be in the basement until you fetch it. I shall buy one from that young plumber in Branch Avenue," and whack! went the receiver.

"Phew!" exclaimed Ed, as he wiped his forehead with the back of his hand. "She needn't get so mad about it—anyone can forget. . . . And anyhow"—with a burst of temper—"she can go to blazes for all I care! I guess I can live without her business!"

This last remark was addressed to me, for I had been in the store while the whole thing happened. In fact, I had been there over an hour waiting to get his order. He would give me a few minutes attention, then think of something he had forgotten and rush off to attend to it, spend another minute or two with me, someone would ask him a simple question and again he would disappear.

Finally, at six o'clock, I was through, and asked Ed to have dinner with me at the Burbank Hotel, where I always stayed in Askenville.

Ed and I are good friends. We have known each other for many years. He has been a steady customer of my house for—well, never mind how many years, and during that time we have been able to help each other in more ways than one.

He evidently did not hear my invitation, so I repeated it.

"Eh?" he said. "Say, I'm sorry, but I was thinking of that shipment of pipe covering which came short—I forgot to write about it." Then, with a burst of confidence, he added: "I'd like to go with you, old man, but it'll take me a couple of hours yet to get caught up. I don't know how it is, but I get tied more and more to my desk; and while I have very little trouble with the men since I started that profit-sharing plan, somehow or other the whole burden of the thing falls on me; and well, you know how it is, old man, if you want a thing done you have got to do it yourself."

I looked at Ed and said, with a smile: "What is your idea of a business executive?"

Ed looked puzzled, but replied: "I guess you mean the fellow that bosses the job. I call myself an executive."

"I wouldn't," I said. "You are simply a glorified messenger boy. You are just carrying for the whole business. You don't know the meaning of the word executive! I am going to hang around here for another hour, and then you and I are going to dinner together and I'm going to talk to you for the good of your soul." And I smiled at him.

Well, he accepted my invitation, and at 8:30 we had just finished our dinner.

"Now, I'll tell you what an executive is," I said, as soon as we had lighted our cigars. *"An executive is a man who spends his time directing the efforts of others, seeing that they do the work which he plans for them; and who also spends his time in developing methods of building business.*

"A man who ties himself down to his desk with routine work is not an executive at all. His mind is so engrossed in trivial detail that he cannot give any thought or time to the bigger problems of profit-making. Those jobs you were doing this afternoon, anybody else could have done. You ought not to have had to waste your time talking over the phone with Mrs. Beardsley. Had you been an executive, you wouldn't have had to talk with her.

"By the bye, old man, why do you yell 'Hello' into the telephone when anybody calls you up. When you do that they have to ask you who you are, you tell them, and by the time you have both found out who is at the other end of the wire, you have wasted enough time to get the whole job finished. Put that young woman in your office to answer the telephone, and instruct her that when anybody calls up, instead of saying 'Hello' to say 'Askenville Plumbing Company,' and to 'put a smile in her voice' when she says it.

"I musn't talk to you about the telephone, though, for that isn't what I had in mind. Let's come back to our talk on what constitutes an executive.

"An executive, then, is a man who plans the work for everyone, gives them the work to do, and leaves them to do it. He also plans his own work in the same way, so as to be sure that it is all done in the correct order, and that he has ample time to think over his business problems.

"You never heard of the heads of those mammoth organizations spending every hour of the day and night on their jobs. You hear of them spending their afternoons at golf, auto trips, and all kinds of recreation. But while they are on their recreation, they are free from all petty routine work and can concentrate their minds on the larger problems of management. When they have solved those problems, they turn the actual doing of the work over to subordinates.

"You, Ed, can't plan a decent advertisement, or write up a good form letter, while you are rushing around the

shop, seeing that this man and that man gets off on to his job.

"I'll tell you how you can handle all the routine work of yours in half the time it takes you now. Some of the time saved can be spent in going over the golf links, which will clear your mind of details and enable you to view your business with a better perspective."

Ed took a fresh grip on his cigar, and said, laconically, "Shoot!"

"The first thing for you to do is to have a tickler. A tickler is a card index having a partition for every day of the year. On blank cards you write down anything that has to be done on any future date, and put the card in the tickler under the date on which that matter has to be attended to. That takes care of general matters. Now let's go back to the store and see what you have got to do tomorrow."

We strolled over to the store, and between us wrote a list of all the jobs that had to be dealt with in the morning.

"Now," said I, after we had finished, "here is a list of each man's work for tomorrow. In future, give this list to the stock man during the day so that he can get any material necessary for the jobs ready the night before. Then, first thing every morning, he can give the men the material and instructions for each job. There is no need for you to waste your time in seeing that the men get out on the jobs as you are doing now, if the men get these written instructions and the stock man has the material all ready for them.

"Now, for your own work,—what have you got to do tomorrow?"

There were twelve or fourteen items which he had to attend to.

"Which of these is the most important?" I asked.

Ed looked up and said, "Gee, I forgot to write about that pipe covering, after all. I guess, however, the most important thing is to see that I make up the order for valves."

"Don't you think, old man," said I, "that it is really more important to get that matter of pipe covering settled up?"

He shook his said, and replied: "Yes, I suppose so—but it is going to be a rotten job to go over all that stock again, and I guess I'll have to do it myself."

"Really, then," said I, "the reason you are not doing it is because it is a tiresome job and you are postponing it for that reason! I wonder why it is that so many smart business men will hold off finishing an unpleasant task just because it is unpleasant! You put down that job for first thing in the morning! And as soon as it is done with, it will be off your mind."

Well, to cut our story short, we planned the order of cleaning up every matter that Ed had to attend to in their order of importance, so that if he couldn't get it all finished, the least important things would be those that would be carried over for the next day.

It was 11:30 before I hit the hay at the Burbank; but I felt that simple as this matter was, it was one which would save Ed a tremendous lot of time. And I knew that if he had more free time on his hands, he would make himself a bigger merchandiser than he was at present.

I called at the store at the end of the next day, and found Ed wreathed in smiles. He had got through the day's work much sooner than he expected, and at half-past five we left the store to have dinner at his house.

The stock man was then busy assembling the materials for the next day's jobs. In Ed's tickler for the next day was a list of his duties, in the order in which he was going to tackle them.

He took my arm and said: "Who'd have thought that such a simple plan as that you gave me yesterday would save such a tremendous amount of time? I think that where I am saving the most time, however, is in not wondering what I am going to do next. I have got it all there in front of me, and the work goes ahead like greased lightning!"

If every plumber would adopt a tickler plan, preparing the work for every man, as well as himself, in advance; and if every plumber would put the actual performance of the work on his work people as much as possible, it would leave him free to grow to be a bigger merchandiser. The main reason why so many plumbers do not make money is that while they are excellent plumbers and understand the technical part of their business thoroughly, they are sadly lacking in a knowledge of business conduct and methods of merchandising.

The only way they can gain this knowledge, so necessary for dollars and cents success, is to plan their work to give them time enough to study their business problems, free from the mental entanglements of routine detail.

JAMES S. CASSEDY ANNOUNCES HIS CABINET.

James S. Cassedy, of Cambridge, Mass., president of the National Association of Master Plumbers, has just announced the make-up of his cabinet as follows:

Board of Directors:

S. Louis Barnes, 2104 North Sixth Street, Philadelphia, Pa.

Frank J. Fee, 292 Avenue B, New York City.

John Trainor, 877 North Howard Street, Baltimore, Md.

C. J. Herbert, 422 S. Dearborn Street, Chicago.

William F. Eckart, 1614 Third Avenue, Seattle, Wash.

J. B. Collins, 1508 Texas Avenue, Houston, Texas.

L. McNamara, 5376 Easton Avenue, St. Louis, Mo.

Henry Green, 77 West South Temple Street, Salt Lake City, Utah.

Alexander Coleman, 706 Ellis Street, San Francisco, Cal.

Jacob Schuh, 1120 Vliet Street, Milwaukee, Wis.

W. S. Loftis, 97 Marietta Street, Atlanta, Ga.

These with Vice-President D. H. Roberts, of Cleveland; Secretary Richard J. Welch, of Cambridge, Mass., and Treasurer Wm. McCoach, of Philadelphia, will assist President Cassedy in the direction of the affairs of the association for the ensuing year, and he is to be congratulated on his choice, since all the members are men of ripe experience, who have shown their caliber in efficient work in association affairs.

Douglas, Ariz.—George F. Barrett will open a plumbing establishment in this city.

Cleveland, O.—The Martens Plumbing Co. has been incorporated with a capital of $5,000. The incorporators are J. B. Martens, E. Martens and C. L. Jones.

Rockford, Ill.—Lee Huston has opened a plumbing establishment in this city. Mr. Huston was formerly connected with Frank Spoor's hardware business.

Wheeling, W. Va.—Daniel Prager has just opened an up-to-date plumbing establishment on the National Road, near the "S" bridge. Mr. Prager is a well-posted plumber, having been associated with the Hare Plumbing Co. in this city for the last sixteen years.

A Sanitary Engineer's Views on Housing

By Thos. J. Claffy, Assistant Chief of Sanitary Bureau, Chicago, and President of the American Society of Sanitary Engineering

(Concluded from Page 6 in the October 2nd Issue.)

Housing in Tenements.

The housing problem if confined to residences would be a fairly simple matter. The tenement house makes it a subject of grave importance and greatly complicates the situation. A tenement may be defined as any building or portion thereof which is used or intended to be used as a home or residence for two or more families living in separate apartments where they carry on the usual domestic avocations of home life.

A home naturally appeals to us as a place where we live, where our meals are prepared, where we dine and invite our friends to partake of our hospitality, where we eat, sleep and make merry, where we receive our earliest teachings at our mother's knee and where we in turn teach our little ones their lessons in life.

It is unfortunate that the earliest recollection of a home to many people is a squalid room in a crowded tenement. That the squalid tenement, overcrowded, dilapidated, insanitary, dark and foul-smelling, has an injurious effect on public health is forcibly brought to mind by the report from the Department of Health in New York showing mortality per 1,000 of population:

Prior to 1867 (first tenement house law)	over 35
1867 to 1879 (second law enacted)	28
1879 to 1895 (third law enacted)	26
1895 to 1901 (present law enacted)	22
1902 to 1907 (under present law)	19.6
1908 to 1910 (under present law)	16.4

It is undoubtedly true that an improved water supply and distinct improvements in plumbing practice and installation, a cleaner food supply and better medical supervision over school children has had much to do with the lowering of the death rate. However, the housing of people in buildings with proper light, ventilation, yard space, plumbing and drainage has had a great deal to do with the improvement in public health.

Before there was a tenement house law or proper building regulations, it was common practice to build up solidly within four walls, place bedrooms in the middle where they had no window ventilation to the outside or direct air where the window was within 6 inches of the wall of the adjoining house, which absolutely precluded the possibility of light and proper ventilation, and these same customs also produced the miserable dark bath room or small bedroom ventilated and lighted by a "dinky' light shaft not much bigger than a chimney flue.

In many of the older cities we still find evidences of the bad practice of building houses with such rooms on streets which were not much wider than the entrance doors, and with no court or passageway between the lot lines and with very small back yards. Conditions of this sort made necessary the enactment of legislation governing the erection of tenement houses. From a study of such conditions it was deemed necessary to provide that the minimum area of living rooms should be set at 80 square feet with a minimum glass area of window at 10 square feet, and in rooms larger than 80 square feet the glass area to be at least 10 per cent; that such windows should be arranged so as to open at least half their area and that the top of such window be at least 7 ft. from the floor line. Variations from these may be found in the different building codes, but they are insufficient to be of great consequence. It is a fairly safe rule to follow that a window should be at least 1-10 of the floor area of a room and it may also be set down that for effective lighting a window should not be at a greater distance from the opposite wall of a room than about twice the height of a window, or say 15 feet.

Every living room should be so designed that it will be lighted all day, or at least during that part of the day when sunlight is strongest, sufficiently to enable one to read with ease in any part of the room.

The ventilation of such a room, depending as it does in the average house on windows, is very often totally neglected. The average house wife ventilates a room by

Residence Ideally Located, With Ample Provision for Light, Air and Drainage.

opening the window a few paltry inches from the bottom. Opening windows from the top is tabooed for the reason that it soils the window shades and the curtains, which by the way are of sufficient opaqueness to make a dungeon out of what would otherwise be a bright, cheerful room. When the housewife learns to place window shades so that the lower part of the window may be covered if necessary and the upper part left free to admit light and to admit of the lowering of the window from the top, ventilation will be more satisfactorily accomplished and the health of the inhabitants vastly improved.

There is a tendency among builders of modern tenements to provide low ceilings. This is due partly to the plan of decoration, but in a greater measure to economy in heating. We believe the day is not far distant, when careful designers will provide vents in or near the ceiling, which will speedily carry off the overheated air and, by reason of the air currents set up, allow for greater diffusion of carbon dioxide and have a beneficial effect in raising the relative humidity. A room built so as to be tight like a band box precludes the possibility of air currents and without these there can be only a very limited diffusion of exhalations. It is the stagnant, overheated air which causes discomfort and sometimes illness. The only way to guard against this body-envelop-

ing atmosphere in living rooms is to provide air supply in constant streams from the great outdoors.

Yard spaces and courts are of vital importance in tenement houses and should be arranged so as to avoid spaces, which may serve for the collection of rubbish beyond the reach of the man with the hoe. Provisions in the present building code of Chicago requiring that an inner court shall have an opening at least 1 foot wide to street, alley or yard, or an opening at least 6 inches wide, the full height of the building from each end, are a mistake for the reason that a space of that sort cannot be properly cleaned, that it affords a greater place for rubbish and a temptation to the small boy to deposit dead cats for the edification of the janitor.

Yards and courts of tenement houses should by all means be spaces having green grass, flower beds, shrubbery and trees so far as conditions will permit. Courts, shafts and area spaces which will not grow grass should be properly paved and drained to speedily carry off storm-water and allow no breeding place for mosquitoes.

The average up-to-date tenement house provides facilities for the gratification of nearly every whim of the pains-taking housekeeper and seems to be especially designed to make life miserable for the children. There is little or no yard space left to be used as a playground or where they can conveniently dig in the sand or amuse themselves in healthy outdoor play under the eye of their mother. Sending a child out to play in a made-to-order playground under the guidance of a made-to-order guide or instructor is not fun for the children and does not furnish the proper grounds for moral training.

The tendency to erect three or four-room apartments or tenements may be good from the standpoint of economy for the owner but it certainly is not good for the moral welfare of the future citizens of this country or any other, and it appears that the time is at hand when a height limit should be arbitrarily set for apartment buildings to prevent the imposition of what amounts to nothing but hotel life on healthy growing children. Unless there is something done to stop this practice very shortly, we will soon find that as far as the community is concerned the last will be worse than the first, and the back-to-the-soil movement will be more strongly advocated than it is now. A strong, healthy, honorable citizen population cannot be nurtured or placed in the world's arena unless they have been afforded in their early life more natural home surroundings than can be found in any tenement house.

The moral question in housing is often lost sight of, and yet it is of great importance. When a house, designed to be a home and fit place of abode for a family of six, is so occupied that two or three times that number occupy it, then morals are endangered. Overcrowding is a consequence and this results in the lowering of the standards of life; a dulling of the finer sensibilities and a complete loss of all sense of right or wrong in man's relation to God, his country and himself.

Pine Bluff, Ark.—Robinson Bros. have been awarded the contract for plumbing the new Woolworth store in this city.

Schenectady, N. Y.—Stevenson & Sons have been awarded the contract for the installation of a heating system in the Rotterdam pumping station. Consideration $641.

Clay Center, Neb.—The Hanson Plumbing & Heating Co. has secured the contracts to install vapor heating systems in H. A. Swanson's residence and in the Clay Center State Bank.

DISEASE PREVENTION DAY IN INDIANAPOLIS.

The popularity of health and the education of the public in preventive measures against ill health, as the only logical plan in coping with disease, was vividly portrayed in the Second Annual Disease Prevention Day parade in Indianapolis, Ind., on October 1st.

The last State Legislature, being confronted with the appalling fact that Indiana annually loses 9,000 of its citizens each year, besides suffering enormous losses from sickness through the prevalence of preventable diseases, causing an untold amount of suffering and misery, passed a resolution setting aside one day each year to be known as Disease Prevention Day.

Inasmuch as last year's parade was the first event of its kind ever undertaken in this or any other state, the parties responsible are to be congratulated. In testimony of the practical results obtained, the records of the Indianapolis Board of Health show that the first eight months of 1915 produced 122 less deaths from preventable diseases than the same period in 1914, and this is attributed in a very large degree to the object lesson presented by the first parade in 1914.

Disease prevention is not a personal matter alone, but one of public concern, as disease recognizes no man. The only practical solution of the problem to reduce the misery and suffering, caused by preventable disease, is through public education in disease prevention measures. In this respect there are great opportunities for the up-to-date merchant plumber, who is thoroughly versed in sanitary and domestic engineering, to accomplish much good for the health of the community and to make himself more widely known as a sanitarian.

The merchant plumber or sanitary engineer, should hold paramount at all times the fact that he is a sanitarian first. His profession, representing, not only comfort, but disease prevention and sanitation, should be properly presented to the public in a vivid and practical manner.

This was, in a sense, the object of the Merchant Plumbers' Association in entering three large floats, bearing the latest sanitary appliances, with suitable placards setting forth the objects of the association, the necessity of proper supervision in constructing sanitary plumbing and drainage systems, and other facts relating to disease prevention and sanitation through proper plumbing. There were also 10,000 pieces of literature distributed as a further inducement for public consideration, the association co-operating with the City Board of Health.

One of the striking floats was that bearing an old outhouse with a well close by. It was said that there were a number of diseases here last year as a result of actual conditions such as this. In addition to this there were nearly one hundred other floats calling attention to the necessity of clean streets and alleys, the benefits of fresh air at all times, the lack of public comfort stations, the rat, the fly and other vermin, as a medium for communicating disease; also floats picturing the necessity for and results of proper sanitation as a public matter. All these combined together to picture a practical object lesson substantiating that old adge, "An ounce of prevention is worth a pound of cure."

The success of the affairs was due, in a large measure, to the untiring efforts of two prominent sanitarians, Dr. G. B. Jackson, president of the City Board of Health and general chairman of the event, and Dr. Herman Morgan, secretary of the City Board of Health. The efforts of both in disease prevention matters are well known, and the community may congratulate itself in having such men at the head of its health department.

Plumbers' and Fitters' Advertising Contest

Prizes to be Awarded for Best Plumbing and Heating Advertisements Appearing in Newspapers

MASTER plumbers and master steamfitters, who believe in the effectiveness of newspaper advertising as a means of encouraging and promoting business, are cordially invited to enter "Domestic Engineering's" advertising contest.

There is today an increasing number of men in the trade who are making regular or occasional use of newspaper publicity in the development and upbuilding of business in their communities.

In many instances the advertising copy is written in an attractive style, with headlines or eye-catchers, which practically compel the attention of the reading public. In other instances the advertisements are less attractive, and therefore less effective as trade-pulling mediums. Hence the proposition which interests the advertising plumber and fitter is: "How shall I write my advertisements to achieve the best results?"

We believe that the contest inaugurated by "Domestic Engineering" will largely answer the question, for it is the aim of the editor to encourage publicity for the plumber and likewise to determine the degree of progress made by the plumbing and heating trades in stimulating business through newspaper advertising. The contest will prove educational to the trade, as it will afford a note-comparing opportunity on the question of good or poor advertising copy in newspapers.

At the close of the contest the best examples of newspaper advertising for master plumbers and steamfitters will be published, and these no doubt will be of constructive interest to those who believe in the wisdom of publicity for the trade.

"Blow Your Horn!"

The successful master plumber or master steamfitter is in business to make money, and he proceeds along legitimate lines when he "leaves no stone unturned" in the campaign for profits. Window and showroom displays, and newspaper advertising are the big factors in his program for the promotion of business. He adheres firmly to the policy of "blowing his own horn," and blowing it in clear and effective tones, realizing that "if he doesn't blow his own horn, somebody will come along and stuff it with cotton."

Effective newspaper advertising is a good deal like effective window and show-room displays. It depends upon the style of appeal. If it is attractive and interesting, the desired trade-pulling effect is more likely to be accomplished. Newspaper advertising is today recognized as one of the greatest publicity mediums within the reach of business men. Everybody reads the newspaper. Its scope and influence stretches far and near. A newspaper advertisement is read by all classes, the professional man, the mechanic, the rich and the poor.

There are undoubtedly thousands of master plumbers and master steamfitters throughout the United States who advertise either regularly or occasionally in the daily newspaper. In some instances the plumbing and heating advertising has been accompanied by neat and attractive pictures of modern sanitary bathrooms and kitchens.

An enterprising master plumber, conducting a thriving shop in one of the middle states, in writing the editor regarding the value of newspaper publicity for plumbers, says in an interesting letter just received:

"I am a thorough believer in the power of printed salesmanship. Its selling effectiveness and its direct appeal depend upon the way the ad 'talks.' If it is written tersely and convincingly, your ad will be read and thought over.

"For the past few years I have been in the habit of using a double column ad, occupying the space of 4½ x 7 inches in our local newspaper. I can readily see that my policy of keeping myself before the public mind has had much to do with the present degree of success which I have attained as a plumbing contractor.

"I have always endeavored to keep my advertisements snappy and up-to-the-minute. Some weeks ago I concluded a series of health sermons which were continued from day to day. It appears that these were read by many people, and I was surprised at the number of inquiries which I received, a number of which developed into profitable contracts. Among the headlines for these ads, I used for instance: "What Is Life Without a Bathroom?" and "Health Sermons by Dr. Plumber."

PRIZES FOR NEWSPAPER ADS

Mail Us a Clipping of Your Best Plumbing or Heating Advertisements Appearing in Your Local Newspaper, and We Will Enter Them in "Domestic Engineering's"

PLUMBERS' AND FITTERS' ADVERTISING CONTEST.

1. This contest is open to all paid-up Subscribers of "Domestic Engineering" who are Master Plumbers or Master Steam Fitters.

2. The contest closes January 1, 1916, and the prizes will be awarded the following week to those having the best written advertisements.

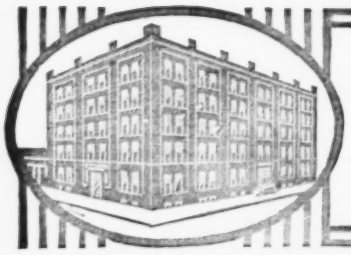
3. The prize for the best and most attractive newspaper advertisement will be $15, while the prize for the second best will be $10.

FINANCIAL TROUBLES.

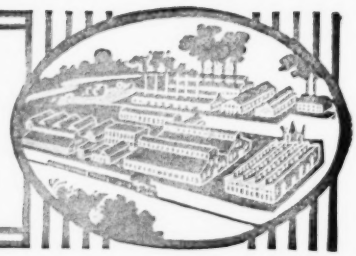
Cranford, N. J.—A petition in bankruptcy has been filed against James Islaib, a contracting plumber, in this city.

Utica, N. Y.—A petition in bankruptcy has been filed against the Utica Sanitary Plumbing & Heating Co. at 537-539 State Street.

Washington, D. C.—A voluntary petition in bankruptcy has been filed by the Bush Plumbing Co., of 2829 Eleventh Street, Northwest. The liabilities are listed at $10,108.72 and the assets at $5,956.35.



Among the Wholesalers and Manufacturers



OPEN OFFICE AND SHOWROOM IN BOSTON.

The Trenton Potteries Co., of Trenton, N. J., is opening an office and splendidly equipped showroom at Boston, Mass., on Tremont Place. George Stevens, well known to the New England trade as a plumbing fixture man, will be in charge of this department.

CHAMBERLAIN CO. MOVES GENERAL OFFICES.

The Chamberlain Co., of Pittsburgh, Pa., is moving its general offices from Grant and Sixth Streets to 628-630 Grant Street. This move will bring the offices in close touch with the company's factory, which is located at the last mentioned address.

WOODWARD-WANGER CO. OPENS BRANCH OFFICE IN PITTSBURGH.

The Woodward-Wanger Co., of Philadelphia, has opened a branch office at 9 Market Street, Pittsburgh, Pa. C. A. Rhea of the home office is at this time busily engaged in checking up stock preparatory to turning the branch over to John V. Cannon, who is the company's Pittsburgh representative and who will have full charge of the office.

LAVIGNE MFG. CO.'S CHICAGO OFFICE IN NEW QUARTERS.

The Lavigne Mfg. Co., of Detroit, Mich., has moved its office in Chicago from Room 800 at 20 East Jackson Boulevard to Room 1004 in the same building. This move gives the company larger and better quarters. The office is in charge of E. W. Sanborn, the company's western sales manager, who will be glad to see his friends in his new office, where he always carries a supply of "Sandy's Specials."

NEW JOBBING HOUSE AT HARTFORD, CONN.

The Eastern Plumbing Supply Co. is the style of a new concern formed to deal in plumbing and steam supplies at Hartford, Conn. Suitable quarters have been leased at 76-78-80 Market Street. The company has been incorporated with a capital stock of $25,000 and the officers are: R. Meister, president; B. Marcus, treasurer, and M. A. Mills, secretary. The latter gentleman has been associated for some time with Thomas Traut, of Hartford.

CONSOLIDATED ENGINEERING CO. ANNOUNCES SEVERAL CHANGES IN ITS BRANCHES.

The Consolidated Engineering Co., of Chicago, announces the following changes in its branch offices: Its New York office has been moved from 114 Liberty Street to Room 1212, 103 Park Avenue. Frederick K. Davis, heating engineer, member of A. S. H. V. E., and formerly manager of the Chamberlin Metal Weatherstrip Co., of New York, is in charge of this office, William A. Backus being his assistant. Roland B. Hall, Jr., of the New York office, has returned to Atlanta, Ga., where he will resume the management of the company's office at 1217 Third National Bank Bldg. S. H. Smith, Jr., who was in charge during Mr. Hall's absence, will be his assistant.

MAGEE RANGE & FURNACE CO. TO LOCATE AT TAUNTON, MASS.

The Magee Range & Furnace Co., of Chelsea, Mass., recently purchased the old Agricultural Fair Grounds at Taunton, Mass., covering more than seven acres of ground, and the company is now building a foundry, 500 ft. long, and other necessary buildings for its factory. The new foundry will have a melting capacity of 70,000 pounds of iron daily. This large lot of metal will go into the manufacture of Magee heating boilers, furnaces and ranges. The construction of this large factory is being rushed to completion and it is planned to have it ready for operation by January 1, 1916. The new plant will be equipped with the latest devices and labor saving machinery. This new location of the Magee company will give its factory electric freight connections with Boston and surrounding towns, with the railroad via the Taunton Central Freight Depot and water transportation connections by way of the Taunton River.

THE SEASON'S FINAL TOURNAMENT OF THE WESTERN TRADE GOLF ASSOCIATION.

The season's final tournament of the Western Trade Golf Association was held Wednesday, October 6th, on the links of the Calumet Country Club, Burnside, Ill., with an exceptionally large attendance.

H. M. Sedgwick won the Association Loving Cup for low net score on eighteen holes, turning in a choice tally of 75. This prize was closely contested during the day, but it appears that Mr. Sedgwick assumed the offensive and smashed his way onward to victory, his strokes being characterized by splendid judgment and relentless precision. He also captured the first prize for low net qualifying, his score being 38. Mr. Sedgwick encountered close rivalry from T. N. Johnson, whose showing was 35⅝ and from J. M. Stannard, whose score was 39⅓. A handsome sterling silver pitcher was the prize carried off by Mr. Sedgwick "for conduct becoming a golf player."

H. E. Keeler in a series of rapid-fire drives in the prize contest for low choice score, succeeded in defeating all opposition with a score of 74 which earned for him the first prize, a handsome sterling silver pitcher. Among the rival players who were close upon his heels were T. N. Johnson (77), E. W. Sanborn (80), J. M. Stannard (81), J. F. Tuttle (83), and L. R. Taylor (84).

The blind bogey prize, donated by F. G. Gregory, Jr., was gracefully appropriated by L. C. Huckins, who came up smiling with a score of 85. For a while the smile faded

when Thomas Barnes tied with him in the bogey contest, but later developments favored Huckins, however. The nature of the prize was not announced.

A special prize consisting of a pair of solid silver cuff buttons, emblematic of golf and golfdom, was donated by A. S. Frampton. This was offered to the player who played the farthest away from his handicap. The fortunate gentleman, who won this prize, was none other than Wm. T. Morgan.

At the Tournament of Western Trade Golf Association.—From Left to Right: Frank Van Inwagen, F. K. Dibley, J. B. Berryman and Paul Blatchford; all of Chicago.

The next special prize was a very unique Buffalo putter, donated by C. D. Little, to be awarded to the player who put the most balls in the pond. As fate would have it, the lucky man turned out to be A. S. Frampton. A "Days of Real Sport" smile shone upon his countenance as he accepted the prize which was presented by Paul Blatchford on behalf of the donor. The presentation was accompanied by a witty speech replete with shafts of humor which brought bursts of laughter from the members as they dined and made merry after the day's play.

First and second prizes were awarded for special proficiency in the flights of the day. The winning gentlemen were as follows:

First flight—H. M. Sedgwick; runner-up, F. D. Keeler.
Second flight—J. F. Tuttle; runner-up, W. Wickersham.
Third flight—T. N. Johnson; runner-up, C. D. Little.
Fourth flight—J. C. Hornung; runner-up, W. B. Dale.
Fifth flight—F. Van Inwagen; runner-up, F. K. Dibley.

At the Tournament of Western Trade Golf Association.—From Left to Right: H. E. Keeler, C. R. Crane, L. C. Huckins and C. Elliott; all of Chicago.

Sixth flight—H. E. Keeler; runner-up, C. R. Crane.
Seventh flight—R. M. Stackhouse; runner-up, John F. Hale.
Eighth flight—C. H. Bishop; runner-up H. H. Hughson.
Ninth flight—S. L. Wright; runner-up, Austin Murphy.

The prizes awarded consisted of special boxes containing silk hose, handkerchiefs and ties; all fit for kings.

The dinner given at the clubhouse in the evening, and at which time the various prizes were awarded, was an eventful occasion. Speeches, wit and repartee sparkled in profusion during the manipulation of knives and forks. The association cup was filled to the brim with "grape-juice," and passed around until the last drop was drained.

The Association Loving Cup, Won by H. M. Sedgwick.

Mr. Sedgwick was the man of the hour, and his praises were voiced in merry and tumultuous song. Thirty-six members of the association and other guests were at the festive board.

C. R. Crane, grandson of the late R. T. Crane, was one of the new players in the association's tournaments. His playing evoked much favorable comment, and it was said that in the future contests, players will have to reckon with him in the race for prizes.

Personal Mention

Theodore Ahrens, of Louisville, Ky., president of the Standard Sanitary Mfg. Co., and the Ahrens & Ott Mfg. Co., has accepted an invitation to make an address before the Louisville Master Plumbers' Association on the subject of overhead costs. The date at which Mr. Ahrens will deliver his talk has not been decided upon, but will probably be some time in November. It is expected that every member of the association will be in attendance on this occasion.

Charles B. Ball, chief of the Bureau of Sanitation, Chicago, is attending the National Housing Convention, which opened at Minneapolis, Minn., on Wednesday, October 6.

E. L. Strauss, president of the Central Brass Mfg. Co., of Cleveland, O., has just left for the East, where he

plans to spend several weeks. It is understood that Atlantic City and other seaside resorts will receive considerable attention from him.

J. H. Kelley, representative of the Raymond Lead Co., of Chicago, while in La Salle, Ill., last week suffered an attack of appendicitis, which made it necessary for him to be taken to Chicago to undergo an operation. His friends all hope for his speedy recovery.

William A. Conwell, who covers Central Illinois for the Davies Supply Co., of Chicago, was in the latter city a few days last week.

M. J. Sullivan, the genial representative of the Illinois Malleable Iron Co., of Chicago, was encountered in Bloomington last week, and he still proclaims Detroit as the ideal home city.

Francis N. Hoeffer, a veteran producer for the John Douglas Co., of Cincinnati, O., believes that baseball is good for one's courage, and while Frank is not lacking in this department, he just had to see the "World Series" this year. When seen last week he was slowly but surely moving toward Boston. Mail will reach him there at the Red Sox field.

Tom Callan, now exploring New England for the Victor Brass Mfg. Co., of Cleveland, O., has decided that there is no place quite like Northampton, Mass., for an open minded, impressionable young man. You see, this town is the home of Smith College, and Tom claims that its inmates are the most hospitable hostesses in the world. Surely an ideal situation!

John L. Ward, traveling promoter for shower baths of the style made by the Speakman Supply & Pipe Co., of Wilmington, Del., was encountered by a representative of "Domestic Engineering" while visiting Pittsburgh this week. When John isn't "*speaking* of Speakman" showers he is telling funny stories that are really funny. Just ask him to tell you of his very first trip to New York City.

William N. McKenna, head of the William N. McKenna Plumbing Co., of 75 Chestnut Street, Boston, has just been appointed lieutenant and second in command of the Ancient and Honorable Artillery Company, of Boston, an organization of which he has been an honored member for many years, and the honor accorded him by his comrades is thus well deserved. A further expression of the esteem of his fellows was shown on Tuesday evening, September 28th, when a banquet was held in the Revere House, Boston, at which Lieutenant McKenna was presented with a handsome gold-mounted sword. The lieutenant, who is jokingly known among his friends as "General Preparedness," was entirely unprepared for this feature of the program, but recovered sufficiently to express his appreciation and to assure his brothers in arms that their esteem was one of the things that he prized most. Lieutenant McKenna is as popular with his employees in the plumbing business as he is with his uniformed friends, and he has built up a reputation for square dealing that has made him one of the Hub's leading plumbers. The Ancient and Honorable Artillery Company of Boston, which dates back to Revolutionary days, numbers among its members representatives of nearly everytrade and line of business.

Wm. N. McKenna, of Boston.

The formidable looking display car of the Lambertville Pottery Co., of Lambertville, N. J., was encountered by a "Domestic Engineering" man at Hartford, Conn., last week. This vehicle is not a baggage car on "stilts"—far from it. On the contrary, 'tis an up-to-the-minute motor car, high powered, rakish and "smellless." It has been about everywhere, but the few unexplored parts that have not seen the "Non-Overflow" bowl still have the sensation in store for them. Philip Faherty and Cornelius Arnett, the company's diplomats, have the expedition in charge and for the success with which it has met they deserve praise.

MASTER PLUMBERS' WIVES AT CRANE CO.'S EXHIBIT AT THE WORLD'S FAIR.

The plumbing goods exhibit of Crane Co., of Chicago, in the Palace of Manufactures at the Panama-Pacific Exposition, in San Francisco, has attracted the interest of many visitors to the Fair. During the recent convention of the California Master Plumbers' Association on the occasion

Master Plumbers' Wives and Daughters in Front of Crane Co.'s Exhibit at the Panama-Pacific Exposition.

of "Ladies' Day" several hundreds of the wives and daughters of delegates were entertained at the Crane exhibit building, a solidly built and modern structure. The Crane guests were royally received by representatives of the company. Choice bouquets of sweet peas were distributed among the ladies, and on departing each was presented with the Crane souvenir. The accompanying picture was snapped in front of the Crane building following the reception to the ladies.

SANTIARY SLATE FIXTURE CATALOGUE.

The Lehigh Structural Slate Mfg. Co., of Bangor, Pa., has just issued an exceedingly attractive catalogue entitled "Modern Sanitary Slate Fixtures," consisting of 44 pages, 9x12 inches. The catalogue illustrates and describes slate urinal stalls of all descriptions, and gives many diagrams showing fixtures set up and all trimmings fitted and adjusted, as it is done before they leave the

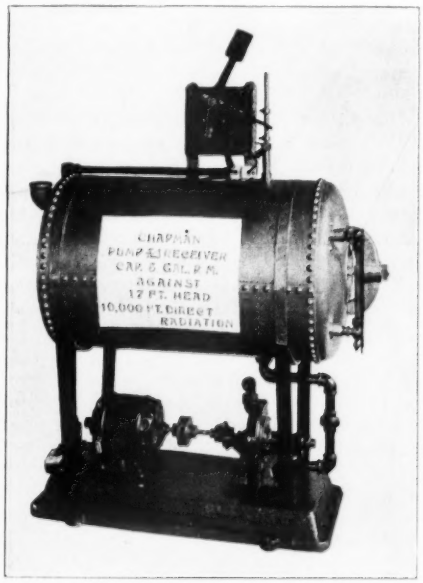
factory. A large proportion of the book is devoted to the company's line of slate showers and stalls and slate laundry tubs and kitchen sinks. Interested parties can obtain the catalogue upon application to the above-named company.

BAKER SPECIALTY & SUPPLY CO.'S CATALOGUE.

The Baker Specialty & Supply Co., of Logansport, Ind., has just issued a catalogue illustrating and describing its specialties for the plumbing and heating trades, including rubber, leather, brass, iron and vitreous china goods. The catalogue consists of nearly 200 pages, 5½x8¼ inches, and it is gotten up in a most attractive manner. A large index in the back of the catalogue makes it a most handy reference book for the trade. Parties in the company's trade territory who have not yet received this catalogue can obtain it on application, mentioning "Domestic Engineering."

THE CHAPMAN CONDENSATION PUMP AND RECEIVER.

The Chapman electric-driven, automatic condensation pump and receiver, shown herewith, is designed to meet the demand for a pump for low pressure work, where boiler and all or part of the radiation is on the same

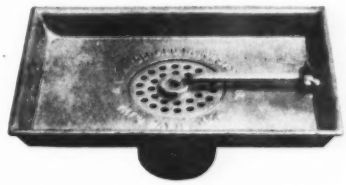


The Chapman Electric-Driven, Automatic Condensation Pump and Receiver.

level, also where the highest efficiency is desired from overhead radiation, or where there is hammering in steam gravity systems, due to water in mains and return. The pump has double self-oiling bronze bearings on the shaft, the only working part; it has flexible rawhide coupling between motor and pump, and is furnished with either direct or alternating current motor. The receiver has ample capacity and will discharge condensation when it reaches any predetermined level shown on gauge. Being electric-driven the pump will handle the condensation from heating systems regardless of steam pressure, insuring free circulation of steam or vapor, and elimination of air, making all the radiation efficient. Interested parties can obtain full particulars from the Chapman Plumbing Supply Co., 204-208 Third Street, S. W., Canton, O., upon request, mentioning "Domestic Engineering."

THE M'DONALD REFRIGERATOR PAN.

The accompanying cut illustrates the MacDonald refrigerator pan, manufactured by A. E. MacDonald, of 271 Main Street, Worcester, Mass. This pan is said to be a strictly sanitary fixture made of cast iron, finished either black or white, giving it the appearance of aluminum. It

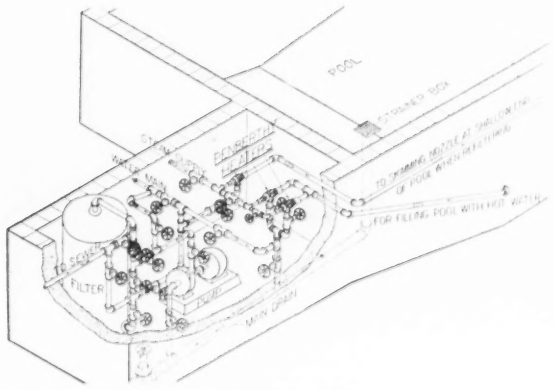


The MacDonald Refrigerator Pan.

is a trap and pan combined and it is furnished with screw pipe or cast iron soil fittings for caulking. It can be furnished with or without hinge. Parties interested can obtain full particulars from the above-named manufacturer upon application.

THE PENBERTHY "XL-96" SWIMMING POOL HEATERS.

The accompanying illustration shows a typical installation of the Penberthy "XL-96" heaters in connection with a swimming pool. The heaters are placed in the valve pit constituting, aside from the boilers, the heating division of the filtering, refiltering and filling system and they maintain the proper temperature of the pool in perfect time with filtering, refiltering and filling processes,



The Penberthy "XL—96" Heaters, Applied to a Swimming Pool.

and they can also be used for circulating and heating of pools where no filtering or circulating systems are installed. The heaters are installed in sets of three as indicated in the illustration, ranging in size from No. 4 to No. 10, having pipe connections 1¼-inch to 4-inch respectively, and they will heat pools with a capacity of 15,000 to 150,000 gals. These heaters are manufactured by the Penberthy Injector Co., of Detroit, Mich., which will be glad to send interested parties full particulars on request, mentioning "Domestic Engineering."

THE "UNIVERSAL" SEWAGE SPRAYING NOZZLE.

The Snow & Petrelli Mfg. Co., of New Haven, Conn., has just issued a large folder illustrating and describing the "Universal" matchless sewage spraying nozzle, by the use of which, it is stated, troublesome and costly screening in sewage systems can be eliminated. This nozzle is cast in one piece of silver-steel, a very strong durable and non-corrosive metal. It is made in sizes to fit any requirements, and the company will be glad to send this folder and full particulars to interested parties on request, mentioning "Domestic Engineering."

Steel and Iron.

The leading feature of the steel business last week was the continued buying of rails. The New York Central placed the largest order of the week, one for 120,000 tons. Other orders booked by rail mills brought the total of new business for the month of September for both foreign and domestic account up to 404,000 tons. This is the largest amount of business consummated in any single month for three years and adequately reflects the rail situation. Car buying follows rails in importance. It is stated by a leading authority that inquiries in the market call for about 18,000 cars. During the week car purchases reached a total of 6,000. In steel rounds the purchase of the Hydraulic Steel Co., Cleveland, of 35,000 tons of steel rounds for delivery next year was a feature. J. P. Morgan & Co. placed orders for 75,000 tons blooms and rounds for export to France, while 10,000 tons were taken by a Gloucester, Mass., plant for conversion into shells. Inquiries reached a total of 400,000 tons, of which 175,000 are for export.

In the pig iron market the expansion in the demand for steel making irons for export was the feature of the week's developments. Inquiries for 15,000 tons were received from France and Italy, and it is learned that a Buffalo interest has booked a good part of this tonnage, details of which are as yet unavailable. A number of Eastern railroads last week closed for pig iron tonnage for last quarter shipment, although the iron will not be used until next year. At Birmingham the market is firm. Prices are rising and $12 is the minimum for spot, while a Cumberland, Tenn., stack that recently resumed sold its output for the rest of the year at $13. There is little iron left at Birmingham for last quarter delivery, and in view of the steady demand higher prices are probable. Advices state that stocks have been reduced to about 150,000 tons foundry, with 20,000 tons basic and 80,000 tons warrants. Some of the warrant iron which was bought around $9.25 to $9.50 was sold last week at $12 spot. Quotations are as follows:

No. 2X Northern Foundry, New York	$16.75 to $17.00
No. 2X Northern Foundry, Buffalo	15.50 to 16.00
No. 2 Southern Foundry, Birmingham	11.50 to 12.50
No. 2 Southern Foundry, Cincinnati	14.40 to 15.40
No. 2 Southern Ohio Coke, Cincinnati	14.00 to 14.50
No. 2 Northern Foundry, Chicago	14.00 to 14.50

Copper.

Heavy sales of electrolytic copper last week resulted in establishing the price at 18 cents for cash and 18¼ cents, thirty days delivered. About 50,000,000 pounds were sold, of which 35,000,000 pounds went to domestic consumers and the balance to export account. Various causes contributed to assist in bringing about a resumption of buying. The beginning of the allied offensive in France caused optimism, the completion of the loan negotiations is expected to bring an early return to normal of foreign exchange, while the shut-out of the striking miners at the Phelps-Dodge properties in Arizona will reduce production by 24,000,000 pounds a month, thus limiting the amount of copper that would go into stocks. The buying of electrolytic during the past week was mainly by war material makers, and it is from this source that the main domestic support must come, as real domestic consumption is small.

Tin.

The tin statistics were published on Thursday and caused a distinct shock when it was announced that deliveries for the month of September only amounted to 4,300 tons from both Atlantic and Pacific ports, while stocks increased almost double to 4,546 tons on Sept. 30. Up to the time the statistics were announced it was expected that deliveries would show up about 6,000 tons as the heavy arrivals, it was felt, were on old purchases, but instead consumers did not draw heavily on importations. With October arrivals in prospect almost as heavy as those last month, there will no doubt be an increase in accumulation of tin. Naturally a continuation of the weak market was sure after the situation became known. The spot market opened the week at 32⅞ cents asked, but the price receded to 32 cents on Friday. Futures suffered accordingly with little or no business consummated.

Lead.

The demand for lead continued active during the last week. War material manufacturers were in the market for last quarter and 1916 shipments, and the amount of business booked by the leading agencies runs up to a very large total. In face of the steady demand, the failure of the American Smelting & Refining Co. to advance the price constituted a frizzling factor. The leading interest has been asking 4.50 cents, while outside interests last week secured 4.55 cents, New York, for spot and October shipment.

Spelter.

The market in spelter has been unusually strong during the past week. The demand for spot and October shipments from domestic consumers, including galvanizers and brass makers, resulted in an advance in price to 14½ cents, New York, and 14¼ cents, East St. Louis.

Old Metals.

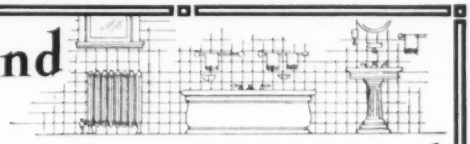
The recent advances in the primary markets have caused firmness in prices for old metals. The selling prices are quoted approximately as follows:

Copper, heavy cut and crucible	16⅜ cents
Copper, heavy and light	16⅛ cents
Copper, light and bottoms	14½ cents
Heavy machinery composition	12⅞ cents
Brass, heavy	10⅞ cents
Brass, light	9¼ cents
No. 1 clean brass turnings	13½ cents
No. 1 composition turnings	12⅛ cents
Lead, heavy	4.15 cents
Tea lead	3.70 cents
Zinc scrap	10⅝ cents

Thomas H. Dalton Called by Death.

Thomas H. Dalton, proprietor of a plumbing establishment at Bancroft and Huntingdon Streets, Philadelphia, died at his home in that city on Tuesday, September 28th, following an illness of three weeks.

Among the Plumbing and Heating Contractors



Illinois

Chicago and Vicinity.

The plumbing contract for an eighteen-flat apartment building, comprising three stories and basement, to be erected at 4450-58 North Whipple Street, has recently been awarded to B. Handler, of 710 Blue Island Avenue.

J. J. Wade & Son Co., of 18 East Harrison Street, has been awarded the contract for the installation of plumbing in a ten-story and basement building (for mercantile use), to be erected at Jackson Boulevard and Peoria Street. The steam heating system will be installed by the F. W. Lamb Co., of 24 East Kinzie Street.

The E. J. Claffey Co., of 12 Illinois Street, will install the heating system in a theater, store and apartment building (including seven stores and fifteen apartments), to be built at the southeast corner of Montrose Avenue and Lincoln Street. The plumbing will be installed by the Luder Plumbing Co., of 1310 Sedgwick Street.

The plumbing system for a three-story and basement orphan asylum, to be erected at the southwest corner of California and Foster Avenues, will be installed by the E. Baggot Co., of 17 East Lake Street.

Joseph E. O'Malley, of 750 Wells Street, has secured the contract for the installation of a plumbing system in a six-flat apartment building to be erected at 425-31 Briar Place.

The Alcock Plumbing Co., of 128 East Twenty-second Street, has been awarded the contract for the installation of the plumbing system in an apartment building comprising sixteen flats and eight stores, to be erected at Seventy-fifth Street and Stony Island Avenue.

The contract for the installation of a plumbing system in a two-story and basement building, to be erected at 3132 North Kilpatrick Avenue, has recently been awarded to Lewis Nelson, of 3521 Fullerton Avenue. A hot water heating system will be installed by Harry Peckham, of 209 Milwaukee Avenue.

M. B. Mason, of 1221 Independence Boulevard, has secured the plumbing contract for a three-story and basement building, comprising theater, stores, offices and flats, to be erected at Avers Avenue and Twelfth Street.

Other Cities in the State.

Daley & O'Brien, of Peoria, were awarded the contract for installing a steam heating main 12 inches in diameter at the St. Charles School for Boys, at St. Charles, on their bid of $16,000.

W. J. Ross, of the Ross-Johnston Co., of Bloomington, accompanied by Mrs. Ross, has started for the Panama-Pacific Exposition, where he anticipates spending quite a few dimes, owing to the completion of several large plumbing contracts this past summer.

The contract for a heating system to be installed in a building for the Price Estate at Champaign, Ill., has been awarded to the Carson-Payson Co., of Danville. Consideration $2,116.

Massachusetts

Contracts for a large addition to the Williams school, in Chelsea, have recently been placed by the mayor, the plumbing going to Frank J. Low, of Chelsea, for $7,996, and the heating to Huey Bros., of Boston, for $14,887.

The Charles A. Ludden Plumbing Co., of Chicopee, has just completed the contract for the installation of a new heating boiler in the City Hall building at Chicopee.

The old question of "when is a plumber not a plumber?" is being thrashed out again, this time in Clinton. The question came up when Frank Gallagher, who holds only a journeyman's license, sought to secure a permit to do certain plumbing work for John Tracy. Mr. Tracy had purchased the plumbing supplies himself and hired Gallagher to do the work connected with their installation. Frederick Murphy, plumbing inspector of Clinton, asked Town Solicitor O'Brien to rule on the question. The same circumstances have arisen in other cities in Massachusetts, and in the case of the city of Holyoke the courts ruled in favor of the journeyman.

Contracts for two large apartment houses, each to contain more than twenty apartments, have recently been placed in Holyoke. Sullivan & Carmody have the plumbing and M. J. Donnelly the steam heating for one to be erected at the corner of Appleton and Pleasant Streets. The other, which will be built on Appleton Street, will be heated by Harry Mason, and M. T. Doherty will install the plumbing. All are local concerns.

Connecticut

Articles of Association, which has the same effect as incorporation without capital stock, have been filed with the secretary of state at Hartford, by the Ansonia, Derby and Shelton Master Plumbers' Association. The papers were signed by Charles Dickgusser, William D. Haggerty and Joseph Wellington.

John McCarthy, inspector of plumbing of the city of Willimantic, and Clinton C. Wood, a former inspector, have formed a partnership and opened a plumbing establishment in Willimantic. Both are young men with experience in both plumbing and heating work.

The Hutton Bros. Co., of Winsted, has the contract for installing a hot water heating system in the Home Block on Main Street, Winsted. This company also has the contracts for installing hot water heating in a house on Rockwell Street for Jules Peguinot; hot air heating in houses in New Hartford for George W. Bancroft, John F. Smith and E. C. Kelly; new plumbing in a house on Rockwell street for Miss Slavin, and in a house in Colebrook for D. M. Keith.

The contracts for plumbing and heating in a new house on Carroll Street, Naugatuck, for Edward O'Brien, have been awarded to George Wigglesworth. Mr. Wigglesworth has similar contracts for a house on Millville Avenue for John Rice.

The Rehill Plumbing & Heating Co., of Bridgeport, has the contract for plumbing and heating in a two-family house on Merchant Street for E. A. Gray.

The plumbing and heating in a house on Edna Avenue, Bridgeport, for C. H. Luch, will be done by Rockwell & Ford.

The contract for plumbing in a house being erected on Wayne Street, Bridgeport, for Mrs. Carrie Wheeler, has been placed with F. B. Wheeler.

Sanford & Rasmussen, of Bridgeport, have secured the contract for plumbing in a two-family house, to be erected on Garfield Avenue, for W. A. Halliday.

Another two-family house is to be built on Ford Place, Bridgeport, for George H. Zink, Jr., and the plumbing in this will be done by Seyfert Bros.

George Hebermeihl, of Bridgeport, has the plumbing contract for a large addition to a business building on Barnum Avenue, owned by Herman Ohn.

W. K. Sherwood has contracts for plumbing and heating in a large modern house, to be erected in Bridgeport for C. F. Holcomb, treasurer of the Canfield Rubber Co.

Indiana

Indianapolis and Vicinity.

A. E. Werkhoff, of La Fayette, has been awarded the contract for a direct-indirect steam heating system for the new two-story addition to the Flora (Ind.) high school.

Frank Stewart has secured the plumbing contract for a new parochial school being erected at Rural and North Streets, Indianapolis.

August Buschmann & Sons are installing the plumbing in a new warehouse building being erected for S. E. Raugh at Senate and Georgia Streets, Indianapolis.

John Stewart is installing the plumbing in a private garage being built for Mrs. Catherine Egan, 1612 Broadway, Indianapolis.

O'Donnell & Barrows, of Washington, Ind., were awarded the contract for plumbing in a new residence for Chas. Keith of that town.

The hot water heating and plumbing contract for a new residence under construction for E. Ray Fortune, of Vincennes, was awarded to Burke & Boyd, of that city.

Burke Bros., of Gary, have secured the plumbing and steam heating contract for a six-apartment flat building being erected there.

Weissell & Chrisman, of Terre Haute, have been awarded the plumbing and heating contract for a bungalow being built for Dr. O. Fink at Terre Haute.

Among other contracts Prox & Burget, of Terre Haute, were awarded the contract for plumbing and steam heating in a three-apartment flat building on South Eighth Street, and a two and one-half story residence on South Center Street.

Hutzel & Co., of Muncie, have the steam heating and plumbing for a new residence being built for Clino Kibele.

The National Heating & Ventilating Co., of Indianapolis, with a combination bid of $11,958 for plumbing and steam heating, were the low bidders on this work for a high school building at Oblong, Ill.

Jack Longnecker, of Anderson, will install both the plumbing and a hot water heating plant in the new residence for Dr. O'Neil; also plumbing in the residence of Cecil Hopkins.

Freyn Bros., of Indianapolis, were awarded the contract for steam heating and plumbing in the new five-story Heier Hotel Building, at the corner of Washington and New Jersey Streets.

Clarke Bros., of Indianapolis, have the contract to install steam heating and plumbing in the new veterinary building at Purdue University, La Fayette.

Freyn Bros., of Indianapolis, have the contracts for steam heating and plumbing in a three-story telephone building at Fortieth and Central Avenue; in a public garage at Walnut and North Illinois Streets, and in a church at Fifteenth and New Jersey Streets.

Foley Bros., are installing a hot water heating plant and plumbing in a new two-story three-apartment flat building on North Meridian Street, Indianapolis.

Liniger Bros., of Hartford City, have the steam heating and plumbing contract for the new County Infirmary building at Hartford City.

The steam heating plant and plumbing for a new house being erected on West Thirteenth Street in Anderson, is being installed by V. H. Osborne. He is also plumbing a new house on Jackson Street.

Rhodes & Troyer, of Logansport, are installing the plumbing in a school building at Twelve Mile, Ind.

The hot water heating plant for a new parish house for the Swedish Lutheran Church at South Bend is being installed by Hoglind & Roberts.

W. H. Burke, of South Bend, has the contract for hot water heating and plumbing for a residence being constructed for A. B. Kinney at that place.

At the Indiana Master Plumbers' Convention in Laporte, Ind. —From Left to Right: Mrs. J. W. Orth, Lafayette; Mrs. S. F. Martin, Lafayette; Mrs. Kutz, Goshen; Mrs. E. E. Clapper, Lafayette; Mrs. J. P. Dragoo, Muncie; Mrs. Thos. Williams, South Bend, and Mrs. Geo. B. Wallace, Lafayette.

M. E. Vaughn & Son, of Plainfield, were the successful bidders on the plumbing and steam heating contract for the new Masonic Temple to be built there this year.

The Cotton-Wiebke Co., of Indianapolis, has the plumbing contract for a two-story residence to be built on Parker Avenue; also the plumbing and steam heating contract for a $50,000 residence to be built for Dr. Albert M. Cole.

The steam heating contract is soon to be let for No. 2 factory building for the National Motor Vehicle Co., Indianapolis.

It was predicted that building operations in Indianapolis this fall would be on the increase, and now it appears that this is true. During September building permits to the amount of $1,211,776.75 were issued, as compared with $400,664.50 for the same period last year. September was the best month for the year, and it is further predicted that there is to be a proportionate increase throughout the remainder of the year.

New York

New York City.

Rubin & Marcus, of New York City, are plumbing the new five-story apartment block in course of construction at 180th Street and Clinton Avenue.

John Boyd Plumbing & Heating Co., of New York City, has secured the contract for plumbing in the new residence being erected by G. E. Ide at Locust Valley, N. Y.

Henry Salzman, of New York City, has the contract for plumbing the new store block at 149th Street and Prospect Avenue.

Woodward F. Ebner, of 708 E. 180th Street, New York City, has experienced an exceptionally good season in heating work. He is installing the heating equipment in a store and apartment operation at 499 Willis Avenue, and another at Southern Boulevard and 174th Street, for Williamson & Bryan; an apartment block on Walker Avenue for Hartigan Realty Co., and a number of smaller operations in Yorkville.

The heating in the court house addition at Schermerhorn and Smith Streets, Brooklyn, is being installed by L. R. Merhitt & Co., of New York City.

J. F. Dalton, of New York, is installing the hot water heating system in the Naval Hospital at Newport, R. I.

Teran, Mahaney & Munro, of New York City, will install the heating and ventilating equipment in the new court house being erected at White Plains, N. Y. P. F. Kenny, also of New York City, will install the plumbing system in this building.

Ohio

Cincinnati and Vicinity.

The excellent showing made so far this year by Cincinnati in the building trades, in spite of various adverse conditions, was very much in evidence in September, as recorded by the building commissioner's office. Although the month is the first of the fall season, and building should, for that reason, begin to fall off, the records show that there were 1,303 permits taken out, for improvements to an estimated value of $1,264,444, as compared with 1,200 permits last year, valued at $665,608, and 993 in 1913, with a value of $868,576. The first nine months of the year compare in a similarly favorable manner with 1913 and 1914, and make it apparent that 1915 is going to rank right up with the boom years in Cincinnati, strange as this may seem. Several good-sized jobs, such as the courthouse, the Pogue addition, and the University buildings, have contributed materially to this, but inasmuch as there has also been a good volume of small work, resulting in a fair distribution of the investment involved, nobody has much cause for complaint, under the circumstances.

The unusual activity which is seen in and around Cincinnati in the promotion and sale of residence property in new subdivisions is a sign of considerable interest to the plumber, and, in fact, to all members of the building trades, as it cannot but mean a great increase in residence construction during next season. The Harmon subdivision, consisting of over 400 lots, is being sold rapidly, and as special inducements are being offered to builders a number of houses are now under construction. The Frederick A. Schmidt Co. is marketing a small subdivision on Linwood Avenue, and has already disposed of nearly all the lots, although the sewers, streets and other improvements will not be completed for some months; and other properties are being sold at a rate which indicates that home-building will be in progress next year at a tremendous scale in Cincinnati.

The boosting habit in Cincinnati has reached such proportions that every business street has its separate organization, composed of business men who exert themselves to see that their particular thoroughfare gets all that is coming to it in the way of publicity, improvements, and business. The latest of these organizations to enter the field is the West Fifth Street Business Men's Improvement Association, which elected as its president at a meeting held last week, W. C. Williamson, of the Williamson Heater Co.

Among the enterprising and well known master plumbers in Conneaut, O., O. C. Laughlin has within recent years blossomed forth as one of the successful men of the trade. He has had a large share of the local work,

The Plumbing and Heating Establishment of O. C. Laughlin, at Conneaut, Ohio.

and his reputation for efficiency in all he undertakes has grown by leaps and bounds. The accompanying picture shows the front view of his establishment, with its window and show-room displays.

On a warrant sworn out by Harry Sutton, assistant plumbing inspector of Youngstown, O., a plumber was arrested last week, charged with violating the city's plumbing ordinance. Violations have become relatively common, according to the plumbing inspectors, and a few arrests were decided upon as a means of pointing out the necessity of keeping an eye on the city's requirements in this connection.

Under the civil service requirements in force in Springfield, O., there were certified to City Manager C. E. Ashburner last week the names of Charles Cavanaugh and A. E. Smith as eligibles for the office of plumbing inspector. One of these successful candidates for the examination will probably be appointed to the position at an early date.

The Hotel Riger, of Sandusky, O., is to be enlarged by the addition of one story on the highest part of the present building and three stories over the rest of it, making the building five stories in height throughout. The addition will provide space for forty additional rooms, which will be modern throughout. Architect H. C. Millott has prepared the plans. Work on the additional construction will start at once.

Kentucky

Louisville and Vicinity.

The plumbing and heating trades of Louisville are busier than usual for this season of the year in spite of the fact that general conditions have not been as good as they might have been. Building during the early part of the year was light, but a general improvement has been noted during the latter part of the summer and early fall. A number of large contracts are now hanging fire, and are likely to be awarded at any time. The principal jobs which the local tradesmen are now still eyeing are the Tyler Hotel job and the new Y. W. C. A. building. General contracts have been let on both jobs, Bailey & Koerner obtaining the Tyler job, while the Y. W. C. A. building went to the George Romel Co.

The Louisville Master Plumbers' Association is watching closely just now the activities of the local journeymen plumbers, who through their local organization, are trying to bring about enforcement of the plumbing law enacted at the 1914 session of the Kentucky Legislature, and later held unconstitutional by Judge Boldrick, of the police court. The journeymen plumbers appealed the decision to Judge Gregory, of the Criminal Court, who now has the matter under consideration, having heard both sides of the argument. It is generally considered that no matter which way the case is decided it will be taken to the Kentucky Court of Appeals for final decision.

A fair attendance was present at the second September meeting of the Louisville Master Plumbers' Association, at which time various discussions were heard concerning the status of the plumbing law which has been the subject of considerable argument in the organization for the past two years. A meeting was held by the special committee, which has the matter in hand, Friday evening, October 1st, at which time the latest developments in the case were discussed. The first October meeting of the organization was held on Monday evening, October 4th, and a good attendance was present as interest has grown in the matter. Committees were appointed and arrangements were made to go ahead with the cost estimating and other work which was dropped temporarily during the warm weather.

The jobbing house of P. A. Vogel & Sons was closed until 1 o'clock on Tuesday, October 5, on account of the death of Mrs. P. A. Vogel, the widow of the founder of the firm. This death was the third in the family inside of a period of sixteen months. P. A. Vogel, founder of the firm, died in July, 1914. In November Joseph Vogel, another member of the firm, died, and Mrs. Vogel died on Friday, October 1.

Jacob Isaacs, one of the leading plumbers of Louisville, and a leading member of the local and state organizations, has been confined to his home for the past few days by a stomach ailment. Mr. Isaacs is a member of the special committee of the local association which has been fighting the plumbing law, but has been unable to attend the meetings lately.

Sealed bids were received at the office of the Business Director of the Board of Education, of Louisville, until 3 o'clock Friday, October 8, for a heating and ventilating plant to be installed at the new Central Colored High School building at Ninth and Chestnut Streets. Several local concerns have bid on the job. The contract will be awarded some time next week.

A fine of $25 was recently imposed against a master plumber in Lexington, Ky., by Judge Riley, of the Police Court, and the case will probably be taken to the Circuit Court and later to the Court of Appeals in an effort to test the constitutionality of the recently enacted plumbing ordinance. The plumber in question was arrested on a charge of violating the plumbing ordinance when a lighter vent pipe was used than required by the ordinance.

Pennsylvania

Philadelphia and Vicinity.

Wm. R. Smith, 4326 Frankford Avenue, has been awarded the contract covering the installation of plumbing in five new houses which are being constructed in Northwood.

Walters, Purks & Mellon, of Ludlow Street, have secured the heating contract for the Remington Arms Co.'s new building in Eddystone, Pa.

J. Sellers Kite & Co., of West Philadelphia, have dissolved partnership. G. W. Wismer now has the entire business and will continue it at the same stand, 523 North 40th Street, where it has been established for many years.

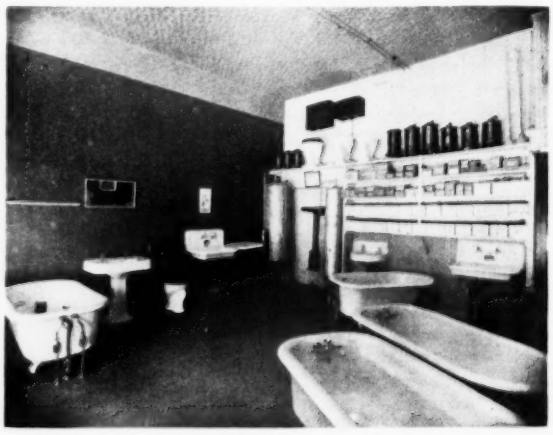
Boon & Sample, of Arch Street, have been awarded the contract to install plumbing work in Cornell University, Ithaca, N. Y.

Edw. P. Stumpf, of Lancaster, Pa., has secured the plumbing and heating contracts in the new Malta Home, which is being erected in that city.

J. G. Schaum, of Lancaster, Pa., has been awarded the contract to install heating and plumbing in the new Examiner Building, which is being erected here.

Missouri

Among the well-known and enterprising master plumbers in Kansas City, Mo., D. E. Allison, of 3637 Prospect Avenue, is recognized as one of the leading lights of the local trade. In the matter of neatness and



Corner in the Showroom of D. E. Allison, 3637 Prospect Avenue, Kansas City, Mo.

attractiveness of display in show-room arrangement in his shop he has caught the spirit of the times. In the accompanying picture, the arrangement of plumbing and heating goods, etc., has been well placed, with a view to making an effective appeal to the purchasing public.

Iowa

The Carpenter Co., of 1538 First Avenue, Cedar Rapids, Ia., is enjoying a busy season, and has the following out of town plumbing and heating contracts on its books: St. Berchman's Seminary at Marion, Ia.; Consolidated school at Orange Township, Ia.; Corn Belt Savings Bank at Belle Plaine, Ia., and the Church of the Immaculate Conception at Van Horn, Ia.

The Rinehart Plumbing Co., of Marshalltown, Ia., was recently awarded the contract to install the plumbing and heating in the Wigs flats, to be erected at 107-109 North First Street. Work will begin at once.

The C. J. Hegardt Plumbing & Heating Co., of Tama, Ia., has purchased the plumbing stock of E. G. Penrose, who formerly maintained a plumbing shop in connection with his hardware establishment in that city.

J. H. Fenton & Co., of Cedar Rapids, Ia., have the contract to install plumbing and heating in a two-flat building to be erected for Mrs. Westover at Vinton, Ia.

West Virginia

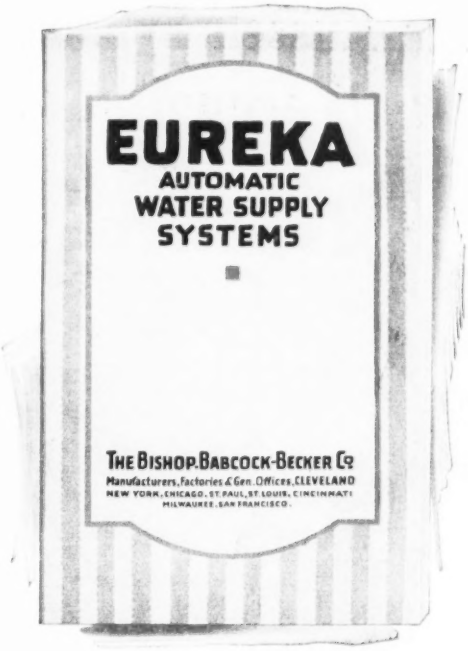
Sweeping sanitary rules governing the schools, barber shops, all public buildings and railroad coaches operated in West Virginia will be promulgated by the public health council at its next regular meeting, which will be held November 9th at Elkins, W. Va. Dr. Jepson, presiding officer, is preparing tentative rules, which it is thought will be adopted without any important modifications. School rooms will be required to have proper ventilation and lighting facilities. The windows will be required to be not more than 3½ feet from the floor and situated at right angles to the left and rear of the room. The rules will provide for the periodical disinfecting of railroad coaches and require that the floors of public buildings shall be dampened before being swept. Vacuum sweepers are recommended where possible. This is the first set of hygienic laws ever attempted in West Virginia. The public health council was created by an act of the late legislature.

Oregon

Portland and Vicinity.

No further changes in the proposed ordinance regulating master plumbers in Portland is expected, and it will no doubt become law in its present form. The ordinance provides for an annual fee of $12 and a bond for the sum of $2,000. This bond will cover the bond of $1,500 now required by the Water Bureau. A committee of members of the Portland Master Plumbers' Association fathered the ordinance, which was drawn by City Attorney LaRoche. The following local men of the trade were on the committee: John Widmer, J. T. Rowe, Wm. Finnegan, Mr. Jacobsen, of Jacobsen-De Temple Co.; Mr. Williams, of Williams & Beggs; Mr. Fullman, of Fullman & Walker, and Secretary Hughson, of the Builders' Exchange, who is also acting secretary of the Portland Master Plumbers' Association.

The firm of Appling, Griggs Co., of Portland and Tacoma, Wash., has been awarded the contract on its bid of $7,249 for the installation of a heating and ventilating



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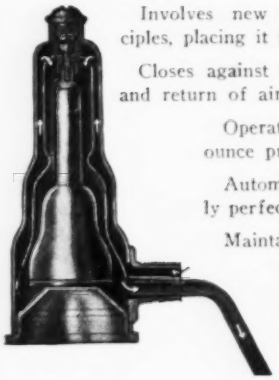

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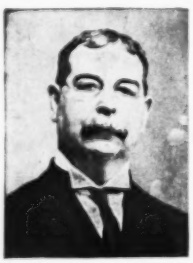

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systems in the State Normal School under construction at Monmouth. Other bidders were: T. M. Barr, Salem, $7,718; Rushlight & Hastorf, Portland, $8,297; and McPherson Co., Portland, $8,244. Snook & Traver, of Monmouth, have the general contract.

Architect J. R. Ford, of Eugene, has been commissioned by Allen & Lewis, of that city, to prepare plans and specifications for a two-story, 80x150 ft., fireproof warehouse to be built in Eugene at a cost of about $35,000. Bids for the general and subcontracts, including heating, ventilating and plumbing, will be received about the middle of October.

Architects Camp & Dupuy, of Builders' Exchange, Portland, are preparing plans for a two-story brick produce warehouse to be built on East Third and East Alder Streets, Portland, for W. B. Glafke. The structure will cost $35,000 and will be furnished with the latest and most modern plumbing and heating equipment. Bids for these installations will be received about the middle of October.

Architects Jacobberger & Smith, Board of Trade Bldg., Portland, will receive bids for the general and subcontracts in connection with the erection of a $40,000 business structure on the corner of Park and Davis Streets, for the Oregon Motor Car Co., Portland. The structure will be two stories high, of brick construction, covering a full quarter of a block.

Thomas D. Maddocks, 1022 Hawthorne Street, Portland, has been awarded the contract for installing plumbing in the $25,000, three-story residence to be built for Gordon Voorhies at Golf Park, near Portland.

G. E. Weaverson, Builders' Exchange, Portland, has secured the ventilating contract for the Methodist Sunday School Temple, under construction at Twelfth and Taylor Streets, Portland. The architects for the structure, Tourtellotte & Hummel, Rothschild Building, Portland, have not yet let the plumbing and heating contracts.

A movement is on foot to have swimming pools installed in the various school buildings in the City of Portland. F. A. Naramore, Supt. of School Properties and School Architect, it is reported, has been asked by the School Board to submit tentative plans and estimates on the cost of the improvements.

Bids for the installation of the heating and ventilating systems for the New Franklin High School in Portland were opened recently with the following result: J. F. Shea, Second and Ankeny Streets, Portland, on the basic bid was low, while on the alternate bid, which calls for more equipment, the firm of Appling, Griggs Co., Portland, Ore., and Tacoma, Wash., were low. The firm of Rushlight & Hastorf, 307 Grand Avenue, Portland, which was low bidder at the initial opening of bids, heretofore reported, withdrew its bid on the ground that an error had been made. The bids which have been referred to the Building and Grounds Committee of the School Board follows: J. F. Shea, Second and Ankeny Streets, Portland, $22,928, for alternate add $4,050; Appling, Griggs Co., Portland, $22,949, for alternate add $3,900; Alaska Plumbing Co., Portland, $23,488, for alternate add $3,979; Rushlight & Hastorf, 307 Grand Avenue, Portland, $23,637, for alternate add $3,859.

A. W. Kutsche, Yeon Building, Portland, has been awarded the contract for the construction of the Beaverton School, at Beaverton, on his bid of $18,000. The general contract includes all general work and heating. The contract for plumbing has been let to the Beaverton Plumbing Co., of Beaverton. Twelve firms, practically all from Portland, submitted figures on the plumbing.

Williamson & Co., Inc., who conduct a plumbing business in Eugene, Ore., have dissolved the corporation.

Washington

Seattle and Vicinity.

Hans Pederson, Madison Block, Seattle, on a bid of $130,113 has been awarded the contract for the construction of the Masonic Temple, to be built on the corner of Harvard Avenue and Pine Street. The general contract includes both the plumbing and heating. Mr. Pederson, besides engaging in the general contracting business, does considerable plumbing work, and during the past few weeks has secured plumbing contracts for the following buildings: Woodland Park Presbyterian Church, 6758 Palatine Avenue; residences for M. D. Hassmann, 730 North 80th Streets; W. F. Rhode, 419 North 48th Street; Cottage Realty Co., 6406 Phinney Avenue; H. A. Juehl, 1100 Newport Way; A. J. Scarlet, 6413 Phinney Avenue; M. L. Trousdale, 107 North 83rd Street; A. Neilson, 423 North 76th Street; M. Bird, 712 North 42nd Street; Andrew Jackson, 6510 Second Avenue, Northwest; Bert Jessen, 3936 Woodland Park Avenue; Edward Jacobson, 3628 Linden Avenue; Wm. Cowling, 755 North 80th Street; David Airth, 8552 15th Avenue, Northwest; R. R. Davis, 127 North 82nd Street; J. L. Carrigan, 1434 23rd Avenue; A. W. Engstrom, 6555 Palatine Avenue; and Greenwood Christian Church, 8015 Fremont Avenue.

F. W. Beck & Co., Lowman Building, has secured the contract for installing the plumbing in an apartment house under construction at 1300-1310 Queen Anne Avenue, for Mrs. E. D. Thomas. Approximately 100 fixtures in all will be installed. This firm has secured many large contracts of late, the largest, perhaps, being for the plumbing work on the eleven-story, $500,000 business structure under construction on Third Avenue and Stewart Street, for the Washington Securities Co. A few of the larger contracts follow: John Humphrey, 5009 Second Avenue, Northwest; Tucker-Hanford Co., a large business structure on 703 Westlake Avenue; large residence at 2159 Hamlin Avenue, for T. H. Collins.

The Eckart Plumbing & Heating Co., 1614 Third Avenue, recently signed a contract for installing plumbing and heating systems in the new Coliseum Theater, under construction at 500-510 Pike Street, for C. D. Stimson Co. This company also has the contracts for installing plumbing and heating in a business structure at 1214 Fifth Avenue, being built for the Metropolitan Building Co., Henry Building, and for plumbing in a large residence under construction at 4157 Thirty-eight Avenue, South, for Mrs. M. Brown.

The Rustad Heating & Plumbing Co., 315 Second Avenue, South, will install both heating and plumbing in a business building under construction at 665-675 Jackson Street, for W. H. Maud. The company also has the contract for plumbing at 3216 Dose Terrace for John Benson. The first named job is one of the largest secured by the Rustad Co. for several months, and one of the largest let in the City of Seattle during the month of September.

Architects Bebb & Gould, Denny Building, have awarded the contract for the installation of plumbing in the four-story, reinforced concrete business block, to be built at Second Avenue and Virginia Street, for the Puget Sound News Co., to D. H. King, 214 Columbia Street. Consideration $1,948.

The following bids were submitted to the State Board of Control at Olympia, Wash., for the installation of heating and plumbing in the School for the Blind, to be built at Vancouver, Wash., by S. C. Erickson, of Tacoma, who

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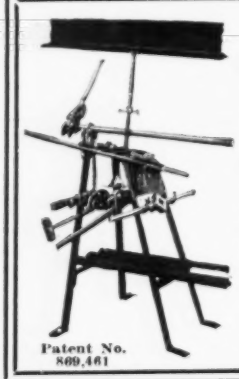

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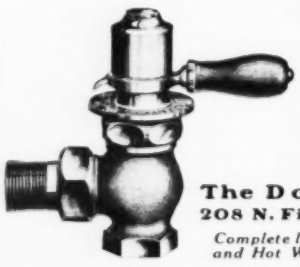

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Artistic design.
Fool-proof.
Position of handle shows degree of opening.
Operates with one-half turn.
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Detroit Valve and Fittings Co.

Manufacturers of

Malleable Iron Fittings and Drainage Fittings.

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secured the contract on a bid of $58,695. Heating bids: Beers Building Co., Pittock Block, Portland, was low bidder, at $2,985. This was submitted on the condition that the general contract be awarded to this company; Ben Olson Co., Tacoma, $3,345; West Coast Heating Co., Seattle, $3,786; Norton & Smith, Seattle, $3,923; Kendall Heating Co., Portland, $3,984; W. G. McPherson Co., Portland, $4,042; Rautman Plumbing & Heating Co., Seattle, $4,100; W. F. Bunce, Portland, $4,186; A. Gehri & Co., Tacoma, $4,180; Hugh F. Phelps, Seattle, $4,200; Appling-Griggs Co., Tacoma and Portland, $4,249; Eckart Plumbing & Heating Co., Seattle, $4,272. Plumbing bids: Fox & Co., Portland, $4,275; Beers Building Co., Portland, $4,275; Ben Olson Co., Tacoma, $4,495; A. Gehri & Co., Tacoma, $4,384.

J. L. Ankrom and D. C. Berry recently purchased the plumbing business of J. O. Johnson at Cheney, Wash., and will continue the business in that city under the firm name of Ankrom & Berry. Mr. Berry has had seventeen years' experience in the plumbing, heating and sheet metal business, and was in charge of Hughes & Co.'s warehouse in Spokane for some time. He has been connected with the Peerless-Pacific Co., Portland, Ore., as traveling salesman for the last two years.

The heating system of the Union Station at Aberdeen, Wash., is to be improved by connecting the system now in use with the Anderson-Middleton Mill heating plant.

California

San Francisco and Vicinity.

The approach of American Builders' Week is occupying the attention of the local plumbing and other building trades to a considerable extent. A number of plumbers are interested in the success of the project and several men prominent in the plumbing trade have been appointed on the committees. The preparatory work is in charge of a general committee which has been made thoroughly representative of the building trades of San Francisco. Alexander Coleman, one of the well known master plumbers of San Francisco, is on the executive committee, and the plumbing supply trade is represented by H. T. Lally, president of the Mark-Lally Co., on the finance committee, while the contracting plumbers are represented by Frederick W. Snook and others. During the week a number of important conventions of other building lines will be held, and it is thought that the exhibits and models planned will draw large crowds from all over the country.

Most of the shops, big and little, report that the usual fall jobbing work preliminary to the rainy season has started off in pretty good shape. So far, there have been no fall rains; but the season is fast approaching when storms may be expected. New work continues about as for some weeks past, there being a fair amount of small work and not much of large size to boast of.

A permit has been issued to the Clift Hotel Co. to install a heating plant in its building at Geary and Taylor Streets.

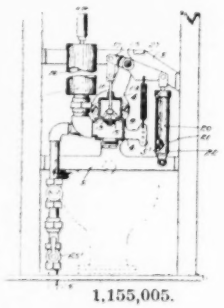
Plans have now been completed and figures will soon be asked on a new six-story and basement apartment house to be erected at the corner of Van Ness avenue and McAllister Street at a cost of $150,000.

Pringle, Dunn & Co., of San Francisco, have been awarded the contract for the erection of new marine barracks at the United States Navy Yard at Mare Island, San Francisco Bay. The contract price is $137,542. Plumbing and heating contracts have not yet been let.

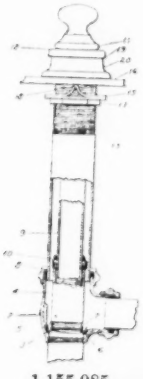
Patents

Plumbing Department.

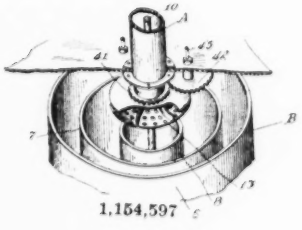
1,155,005. Flushing Apparatus. Romeo Pozzi, Oakland, Cal. In a structure of the character described, a supporting bracket of substantially I-shape having an arm projecting laterally from the vertical member, a valve casing secured to the vertical member of the bracket and provided with inlet and outlet openings, a valve in the casing for closing the outlet opening, a lever pivoted between its ends to the bracket with one end of the lever overlying the valve casing, a connection between the valve and said superposed terminal of the lever, a spring connecting the opposite terminal portion of the lever to the lateral arm of the bracket to seat the valve, a dash pot connected to the base of the bracket, a piston connected to the lever adjacent the spring and operable in the dash pot to oppose the force of the spring, a hand crank for rocking the lever to unseat the valve, and a stop lug arranged on the top portion of the bracket over the lever terminal to which the spring is connected for limiting the rocking of the lever.



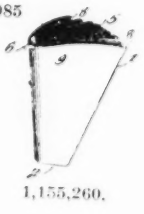
1,155,005.



1,155,085



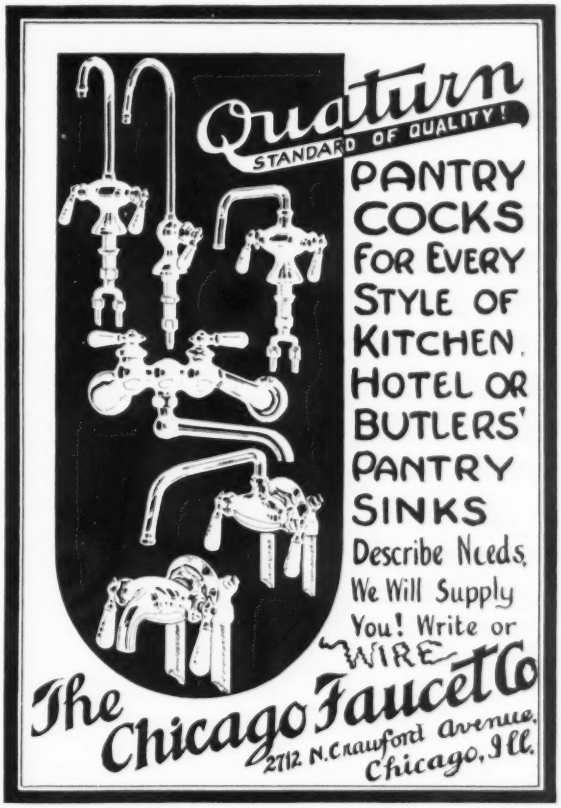
1,154,597



1,155,260.

1,155,085. Bath or Basin Waste. William G. Newton, New Haven, Conn., assignor to The Peck Bros. & Co., New Haven, Conn., a corporation. A bath or basin waste having a tubular valve stem provided with external threads at its lower end, the diameter of the threaded portion greater than the external diameter of the stem, a tubular valve sleeve internally threaded throughout its length and turned onto the threaded portion of the valve stem, said sleeve externally threaded at its lower end and an internally threaded valve ring having seating surfaces at opposite ends applied to the lower end of said sleeve.

1,154,597. System of Separating Sewage. John P. Ball, Chicago. In a system for separating sewage, a basin provided with a series of concentrically arranged chambers, each of which is provided with a controllable discharge, a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have been selected to furnish the hot water at the Panama-Pacific International Exposition, is conclusive proof that the "HOFFMAN" possesses **Real Established Merit.**

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Costs less than many inferior kinds, and does more. Write today for literature.

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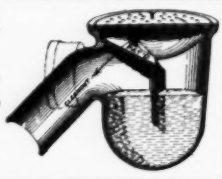

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makes pipe threading easy and reduces expense to a minimum.
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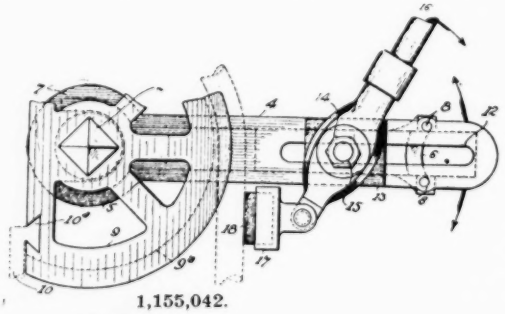
revolubly mounted closed tank placed within the inner chamber of the basin, said tank being provided with concentrically arranged partitions depending from the upper end of the tank, the successive partitions being of increasing depth from the tank center toward the sides thereof, an axially arranged conduit extending through the top of said tank and arranged to deliver the sewage to be treated concentrically at a point in proximity to the lower end of the innermost depending partition, and means whereby the upper end of each compartment intermediate of the depending partitions of the tank may be separately drained to a compartment of the basin.

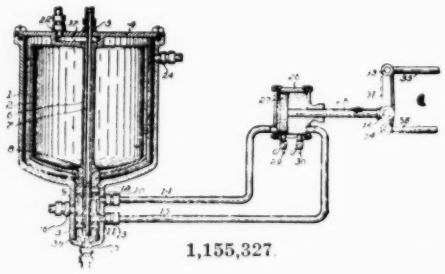
1,155,260. Sanitary Seat Cover. Henry F. W. Meyer, Washington, D. C. As a new article of manufacture, a cover for toilet seats comprising a thin sheet of paper of oval contour, having an oblong central opening, the material being accordion folded around two sides and one end on predetermined score lines, the opposite end of the material being folded on predetermined score lines and forming a housing receiving said sides and first end in folded position, the device being adapted to assume a flat condition upon removal of the said sides and end from within the housing.

Heating Department.

1,155,042. Pipe-Bender. Omer Caron and George Surprenant, Maisonneuve, Quebec, Canada. In combination in a pipe bender of the character described; a fixedly mounted post having a lower rounded portion, an upper squared portion, and an intermediate rounded portion; a beam revolubly mounted on the intermediate rounded portion of the said post and provided with a slot near its outer end; a bracing and supporting beam therefor provided on its lower end with a fork which straddles the



1,155,042.



1,155,327.

lower rounded portion of the said post, and on its upper end with pins which fit into bores in the said beam; a pair of blocks mounted above and below the said beam, at the slotted portion thereof; a sleeve mounted on the upper one of said blocks; a securing pin passed through said blocks and sleeve; a bending lever revolubly mounted on said sleeve; a bending foot pivotally connected to the inner end thereof; a block revolubly mounted therein; an annularly grooved bending form provided with a squared bore fixedly mounted on the squared portion of the said

post, the said form being provided at each end with a recess adapted to receive the head of a pipe securer; and a pipe securer provided with a head adapted to fit snugly into the recess of the said bending form and having a forwardly bent arm with an integral vertical pin adapted to extend a short distance along, and to one side of, the bending form when the said securer is in operative position.

1,155,327. Device for Regulating the Water Level in Boilers. John Lee, Stuart, Iowa, assignor of one-half to Peter J. Basten, Oelwein, Iowa. A device for regulating the water level in boilers, comprising a cylinder containing a piston whose rod extends externally thereof, an arm to which said piston is pivotally connected intermediate its ends, connecting rods from the ends of said arm to the steam and water admission valve of an injector, a closed vessel having a diminished basal portion, the latter provided with spaced exit ports and an exhaust port out of line therewith, a valve movable in said diminished end past said ports, and having a central longitudinal hollow closed at the lower end, and also having orifices adapted to effect occasional communication between the said hollow and said exit ports alternately, communication between said exit ports respectively, and opposite ends of said cylinder, a float in said vessel connected to said valve, said vessel having a valve-controlled communication with a boiler, and a conduit in communication between the steam dome of the boiler and the hollow of said valve, said float when moved down by water entering from the boiler being adapted to move the valve to shift the steam from one of said exit ports to the other, and when caused to rise by steam entering the vessel from the boiler, to re-establish communication between the hollow of the valve and the other exit port.

JAMESTOWN, N. Y., PLUMBERS' OUTING.

The master plumbers of Jamestown, N. Y., recently entertained the journeymen plumbers of that city at an outing in Midway Park. About fifty men were in attendance, and the affair was so successful that it was decided to make it an annual event. Next year the plumbers' wives and families will be invited, as well as the supply salesmen who cover this territory.

The trip to the picnic ground was made in a special car on the J. W. & N. W. railroad, which left at 1:30 o'clock Upon arrival at the park a program of sports was run off. Two ball games were staged, the first between McGinity's team and Sharp's team, ending in a 10 to 8 score in favor of the former. The large score is remarkable, for the reason that there were 13 players on each team. In the other ball game the single men defeated the married men by a score of 6 to 5. The tug-of-war between the masters and the journeymen was won by the former. M. J. Murray won the fat men's race, while Eddie Tordoff won the prize in the slim men's race.

Following the program of sports a fine fish and chicken dinner was served. The return trip was made about 9:30 o'clock. The committee in charge of the affair, to which much of its success was due, consisted of Floyd Sharp, M. J. Murray and F. M. Stearns.

"Yes," said Mr. Smith, "when I was in Paris I had an opportunity to buy either a Murillo or a Rembrandt. I finally took the Rembrandt, and I hope I did not make a mistake."

"Vell, as far as that goes," said Cohn, "any of them French machines is pretty good hill climbers."—Ideal Power.

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Logan Radiators
Logansport Radiator Equipment Co., Logansport, Ind.

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A marvel for strength and simplicity.
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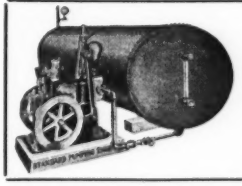

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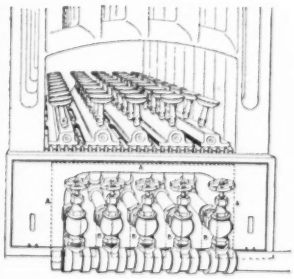
For use in Steam or Hot Water Heating Boilers and Hot Air Furnaces.



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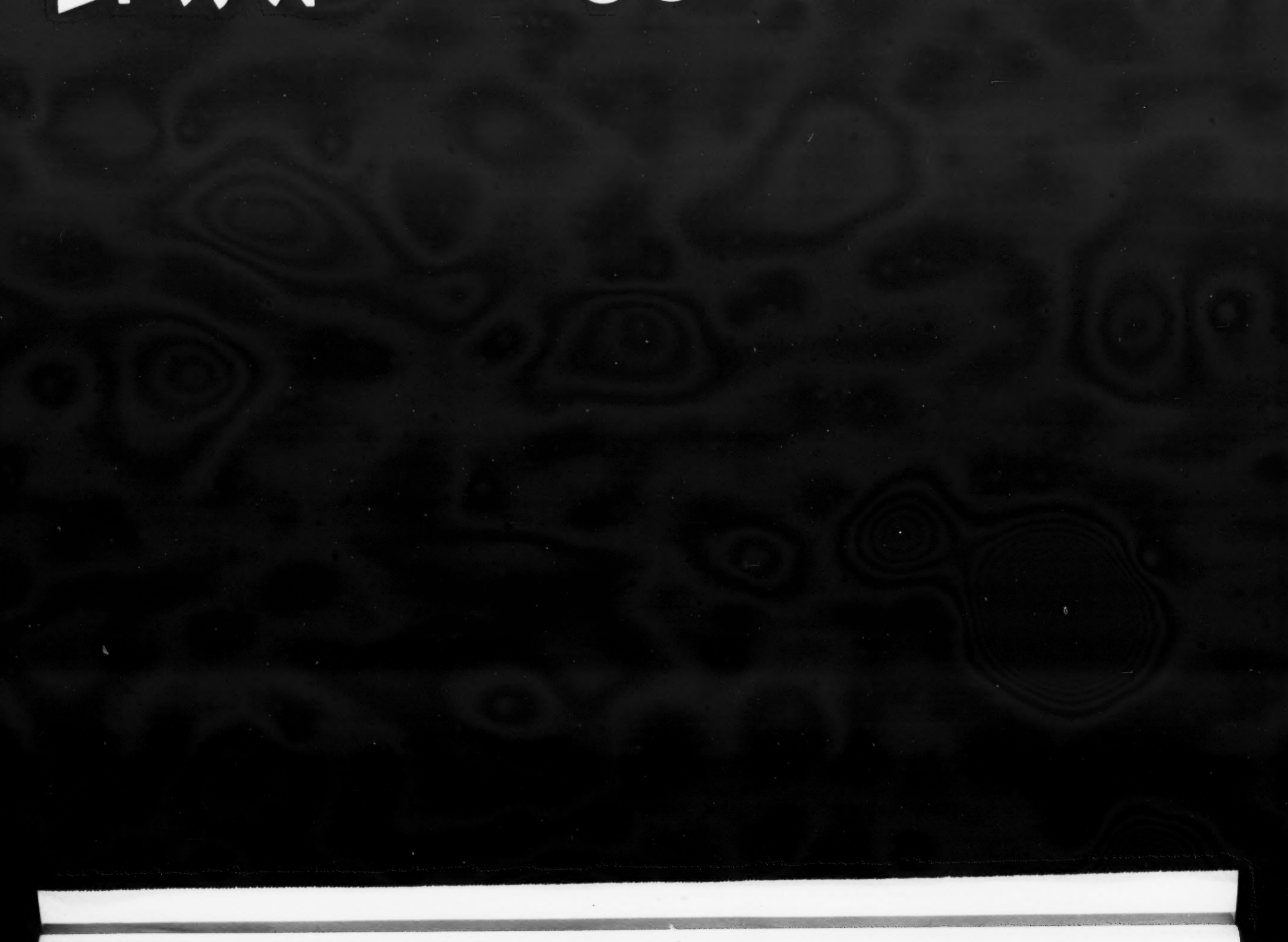
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